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ABSTRACT

This guide is designed to stimulate governments to incorporate health education into environmental health training programs. It provides guidelines for the design, development, and evaluation of training programs dealing with basic sanitary services such as water supply, waste disposal, and vector control. Suggestions are included for increasing community participation in planning and utilizing environmental health facilities, and also for introducing environmental health education in schools. The subject-matter is grouped under three sections. Section one deals with methods of incorporating health education into environmental health program planning. The second section deals with the systematic incorporation of community-oriented health education in the basic and in-service preparation of environmental health manpower. The third section deals with the introduction of environmental health teaching in the school system. (JD)

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GUIDE TO THE INTEGRATION OF

HEALTH EDUCATION IN ENVIRONMENTAL HEALTH PROGRAMMES

K. A. PISHAROTI

U S DEPARTMENT OF HEALTH
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
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GUIDE TO THE INTEGRATION OF HEALTH EDUCATION IN ENVIRONMENTAL HEALTH PROGRAMMES

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WORLD HEALTH ORGANIZATION

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INTRODUCTION

Programmes for the promotion of environmental health are major concerns of governments and related agencies. In developing countries, the emphasis is on the improvement of basic sanitary services - water supply, disposal of human excreta and other solid and liquid wastes, vector control, food sanitation, and housing. Communicable diseases arising out of lack of these basic amenities contribute to the high rate of morbidity and mortality. In many countries the infant mortality rate continues to be around 100 per 1000 live births.

On the other hand, the developed nations, having made considerable progress with the provision of basic sanitary services, are now faced with entirely new problems arising out of atmospheric and water pollution, accidents, urban housing, and town planning, as they relate to mental, social and physical health. This is not to deny the existence of pockets within the developing nations where a high degree of urbanization and industrialization are creating problems similar to those in the developed countries. In fact, the existence of these problems along with the more pressing need for basic sanitary services compounds the difficulties experienced by their planners in solving environmental health problems. By the same token, occasional epidemics of a mostly gastrointestinal nature occur in developed countries, bringing into focus the need for attention to basic sanitary measures and the role of the individual in these matters in all countries.

The design of environmental health interventions in the past was characterized by its overwhelming emphasis on science and technology, with special reference to engineering technology. While adequate attention to technology is beyond question, our increased understanding of the interaction between social forces and technology has created a simultaneous need for consideration of social, psychological, economic, and political variables in the design and operation of environmental health facilities. This is necessary not only for the acceptance by the consumer of technological interventions but also for the realization of maximum benefits in terms of improved health. Technological interventions that disregard the social and psychological after-effects are creating new problems, while presumably solving existing ones. Thus, in planning and implementing environmental health programmes, the interactions between the physical, biological, and social environments must be taken into account since they may have a bearing on the identification of causes and on the interventions proposed and their effects.

That technological solutions should be supplemented by other factors is borne out by a number of experiences in the recent past. In developing countries, particularly in rural areas, people rarely appreciate the need for basic sanitary services, except probably for water. Even the demand for water supplies is usually made for reasons other than those attributable to health. There are many instances where facilities built for excreta disposal remain unused. There is evidence that protected water supplied outside homes may not contribute to an appreciable reduction in waterborne diseases unless certain other behaviour factors are modified. Sanitary regulations and rules are made, but adherence to them is often an exception since the police method of inspection and enforcement has not brought any change in people. Intelligent cooperation has to be sought from the public.

The man-made environment in urban areas of industrialized nations is highly tension producing. New technological interventions in the form of innovations in town planning, housing improvements, etc. call for attention to social variables. Research findings on social cohesion as a means of reducing stress caused by the urban environment is leading to the use of community organization methods by which opportunities for social cohesion could be increased.

The use of health education as one of the interventions in planning and implementing environmental health programmes has received increasing recognition in the recent past. Present sanitary practices among the people in developing areas have their roots in centuries-old customs and habits. These practices cannot be changed easily unless conscious and determined efforts are made. Countries all over the world, irrespective of their stage of development, are recognizing the need to stimulate individuals and groups to assume responsibility for maintaining personal and community health. Great importance is being attached to the involvement of the community in programmes related to health education and socio-economic development. The various expert committees on environmental sanitation, those on national environmental health planning, food hygiene, water and air pollution, and metropolitan planning and development have stressed the need to incorporate health education as an integral part of planning the respective environmental health activities.

Present-day needs under environmental health in developing and developed nations are too great to be met from governmental resources alone. A survey conducted in 1970 by WHO of the status of community water supply in selected developing countries showed that only 23% of the population had access to safe water. Within urban communities 50% of the population obtained water through individual house connexions, while 23% used public standposts. In rural areas, more than 85% of the population - more than a thousand million people - did not have safe water available to them. Further, in many of the piped urban supplies service was intermittent - a situation that renders a water system potentially hazardous to health. A projection for 1980, allocating a goal of water services to 100% of the urban population (60% by house connexion and 40% by standposts) and to 25% of the rural population required an investment of $ 13 200 million. The rate of growth of the population is such that, even if the goals are met, there will be 50 million more people in rural areas without safe water in 1980 than in 1970. The increase in population will result in increased waste production and therefore in greater problems in the disposal of excreta and other wastes.

The overall picture of sewage disposal is even worse than for water supply. It is estimated that currently 28% of urban people are served by a public sewerage system and a further 45% have a household system. In rural areas it is estimated that 91% of the population has inadequate excreta disposal facilities - more than 1060 million people are thus following primitive excreta disposal practices that lead to unnecessary illness, debility, and death. Rapid progress in the provision of basic sanitary services thus depends on the readiness of the community not only to demand these vital services but to pay for them. There are many instances, even in poor countries, where the community has demanded and paid a substantial portion of the cost of water supply schemes when made to realize the advantages accruing from such participation. In Chile experience has shown that the cost of a scheme can be reduced by 15-30% if labour contribution can be obtained from the community. The provision of environmental health services to the community can be accelerated if financial and labour participation is sought, and health education with emphasis on the community organization approach is one of the promising ways to achieve such community participation.

The subject of health education is not completely new to environmental health planners and practitioners. In fact, many engineers and sanitarians have to some extent incorporated health education into their day-to-day work in environmental health. As observed by the Programme Review Committee of the WHO/UNICEF-assisted rural environmental improvement programmes in 1968:

> education does accompany and give some measure of support to most of the UNICEF/WHO-assisted environmental health activities. There is little doubt, however, that health education coverage could be greatly improved and some of the poor results of the past were due in part to a lack of efforts and support in this field.

Most environmental health personnel have expressed a need for more scientific information on this subject. At present, in the absence of any formal training in the subject, either during their basic preparation or during in-service training programmes, they have to adopt practical common sense approaches to solving problems.

WHO has been providing assistance to governments in formulating and implementing both short- and long-term programmes for the improvement of environmental health. The advancement and dissemination of knowledge and methods used in programmes related to environmental health are already part of WHO policy. It is felt that such efforts will be further strengthened by publishing a guide on the essential aspects of integrating health education with environmental health.

The present guide is meant for use by environmental health personnel who will be primarily responsible for planning and supervising the health education components of environmental health programmes. It assumes that they will seek additional technical guidance and assistance from health education specialists with regard to policy formulation, planning and evaluation and to the incorporation of community-oriented health education in the basic and in-service training of environmental health personnel.

Objectives of the guide

The guide has been written with the following objectives:

(1) to enable those concerned with planning and implementing environmental health programmes to understand the basic methods and processes relating to health education,

(2) to enable environmental health planners to incorporate health education as an integral part of programme planning,

(3) to provide assistance to those who supervise and guide the implementation of health education components of environmental health programmes,

(4) to enable environmental health planners and administrators to (a) incorporate community-oriented health education in the environmental health manpower development programmes, and (b) develop programmes for environmental health teaching among schoolchildren,

(5) to bring about an increased community participation in planning, the acceptance and utilization of environmental health facilities, and a consequent improvement in health.

The following considerations limit the scope of the guide.

(1) Since the guide is intended for use by environmental health personnel working in different cultures, it is written in a general way enunciating the basic steps for integrating health education in environmental health.

(2) The guide deals only with general principles, which have to be adapted to suit local conditions.

(3) The educational objectives for each environmental health programme will have to be defined separately. Certain programmes will call for intensive educational efforts, while others will require less attention. There may be different target groups to be reached even for the same programme. The guide will require considerable adaptation to meet these different situations.

(4) Even though the guide will be of considerable value in training, it is not a substitute for textbooks.

(5) Since the guide is prepared with the primary objective of helping to incorporate health education components in environmental health programmes, there is very little theoretical coverage of the subjects concerned. The readers will have to refer to standard textbooks for detailed information on this aspect.

The guide should not be regarded as a substitute or alternative to training programmes. On the contrary, an initial orientation training on the subject will facilitate a meaningful interpretation and use of the guide. Indeed, the guide will serve one of its purposes if it can stimulate governments to incorporate health education into the basic preparation of all environmental health personnel. The orientation and skill thus acquired by personnel will be the key to ultimate success.

The subject-matter of the guide is grouped under three sections. Section I deals with methods of incorporating health education into environmental health programme planning. It will serve as a reference work for those concerned with planning and implementing programmes.

Section II deals with the systematic incorporation of community-oriented health education in the basic and in-service preparation of environmental health manpower and will be of help to those engaged in manpower development programmes. Section III deals with the introduction of environmental health teaching in the school system and is meant for environmental health personnel engaged in planning that type of activity.

SECTION I

HEALTH EDUCATION IN ENVIRONMENTAL HEALTH PROGRAMMES

1. THE IMPORTANCE OF HEALTH EDUCATION

WHAT IS HEALTH EDUCATION?

Health education is an abstract term that means different things to different people. To some it is a matter of public relations aimed at publicizing the activities of health departments and winning public goodwill. Some consider it synonymous with propaganda, i.e., spreading particular systematized doctrines about health. Many equate it with transmission of information about health and diseases from the expert professional to the lay client. For others, there is no difference between health education and mass campaigns. These different perceptions are attributable both to the historical development of health education and our understanding of the learning process. Whatever these perceptions may be, the present guide is based on the following understandings of the meaning of the term health education:

(1) "Health education, like general education is concerned with changes in knowledge, feelings and behaviour of people. In its most usual forms it concentrates on developing such health practices as are believed to bring about the best possible state of well-being."[1] This definition implies that health education has knowledge, attitude, and behaviour components.

(2) "Health education is translation of what is known about health into desirable individual, family and community behaviour patterns by means of educational process."[2] This statement implies that health education aims at individual, family and community behaviour and their interaction patterns.

(3) "Health education is a process . . . leading to programme planning, utilizing available resources, modifying health behaviour, breaking down barriers of ignorance, prejudice and misconceptions after an intelligent and thoughtful consideration of relevant health knowledge . . .".[3] This statement means that health education is a process involving a series of steps and efforts by people and is not a single procedure.

(4) Health education provides situations in which people educate themselves. This statement means that learning takes place through the efforts of learners and that the health educator provides the circumstances in which this learning takes place.

OBJECTIVES OF HEALTH EDUCATION IN ENVIRONMENTAL HEALTH

A WHO Expert Committee on Health Education of the Public[1] stated that the principal objective of health education is to help people to achieve health by their own actions and efforts. Health education begins, therefore, with the interest of people in improving their own conditions and aims at developing a sense of responsibility. Its general purposes are: (1) to make health a valued community asset; (2) to help individuals to become competent in and to carry on those activities they must undertake themselves, as individuals or in small groups, in order to realize fully the state of health defined in the Constitution of the World Health Organization; and (3) to promote the development and proper use of health services.

While the aim and general purpose of health education activities in environmental health would be the same as for health education, the specific objectives are:

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[1] WHO Technical Report Series, No. 89, 1954 (Report of a WHO Expert Committee on Health Education of the Public).

[2] Grout, E. (1968) Health teaching in schools, 5th ed. Philadephia, Saunders.

[3] Krishnaswamy, K. S. & Ramakrishna, V. (1958) Health education and environmental sanitation. Swasth Hind, 2, 284.

(1) General public

- to educate the people on matters related to environmental health so as to make safe environmental health practices and measures a valued individual and community asset,
- to develop demand and secure acceptance by the public of community measures for the improvement of environmental health,
- to secure active participation of people in planning and implementing environmental health programmes and maintenance of facilities provided,
- to enlist financial and/or labour participation from people for the provision and maintenance of environmental health measures.

(2) Special groups[1]

- to develop social norms and values that would lead to the adoption of improved environmental health practices,
- to secure political and budgetary support for environmental health programmes,
- to obtain participation in the promotion of health education activities relating to food hygiene, air and water pollution control, housing and planning of human settlements, etc., for which some of the special groups are the main educational targets,
- to obtain intelligent cooperation on the implementation of regulations from those at whom these regulations are aimed.

(3) School system

- to develop among the schoolchildren the required knowledge and the proper attitudes towards safe environmental health practices and to provide opportunities for carrying out these practices.

DEFINITION OF TERMS

A number of terms like education, learning, communication, attitude, adoption, media, etc. are used in health education, and those concerned with the subject should have a general understanding of these terms and essential differences between them. The definitions of terms generally used are given in Annex 1.

THE INFLUENCING OF BEHAVIOUR

The success of environmental health programmes, whether for the provision of basic sanitary services or for the control of air and water pollution, depends on the sustained, active and voluntary cooperation of people to bring about the desired changes in their existing behaviour. Many existing practices are the result of contacts and socialization within the family or community environment during the lifetime of the individual. Experience shows how hard it is to induce people to accept new practices. It requires systematic efforts and simultaneous attention to a number of variables - social, psychological, economic, technological, administrative, and political. In their day-to-day work, environmental health personnel come across many individuals, families, groups, and communities, and some educational work is done during these contacts, deliberately or otherwise. These educational contacts have to be multiplied, accelerated, and spread over a much wider section of the community, in order to make the maximum health impact. How can we strengthen and systematize our educational activities so that greater and self-generating results are obtained? Much experience has accumulated from programmes aimed at inducing people to accept new practices in such fields as health, agriculture, and home economics. While the purpose here is not to catalogue the lessons learned, a few of the most important principles arising out of these experiences are described in the following paragraphs since they may suggest ways in which environmental health personnel could adapt them for use in their own programmes.

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[1] Special groups include political decision-makers at various levels of government, professional and occupational groups, business groups, religious groups, mothers' clubs, youth clubs, etc.

(1) Every individual, through years of experience, has built up a perception of himself and the world around him. While the perception cannot be directly observed, it can be inferred from behaviour, since perceptions usually guide actions. For example, a person who has an image of latrines as filthy and smelly automatically rejects a proposal to build one in his house. Village people who see hand pumps as devices that will be in constant need of repair cannot be easily persuaded to accept an improved water supply scheme using such pumps. Similarly, something that is not perceived by the individual does not exist for him. Many individuals and communities do not perceive a link between health and current sanitary practices and therefore see no reason to modify existing practices. Health itself may be perceived differently by the experts and by the people concerned. Similarly people may have built up perceptions about health services and those who deliver them that may act as a deterrent to change. Perceptions thus play a significant part in the process of change. They should be studied and opportunities created for people to modify their perceptions where necessary.

(2) The first step in persuading individuals or communities to change their behaviour is to create in them a desire for change. People do not change their customary behaviour unless they are satisfied that the change will help them to meet some perceived need. Many environmental health workers have come across instances of individuals or communities not exhibiting any concern or interest in the innovations proposed. The initial step in education should be to create opportunities through which the curiosity of individuals is aroused. To this end participation in health surveys, analysis of morbidity and mortality records, visits to places where similar programmes have been successfully implemented, and individual and group discussions are useful methods.

(3) Once interest is aroused, people are willing to consider and evaluate alternative courses of action. This is a critical stage of active intervention, and individuals and communities should be helped to compare existing ways with the proposed innovations, to relate the innovations to some of their basic needs, and to overcome barriers to acceptance. The educational approaches at this stage must fit into the learners' perception of the situation. People should not only see possibilities for action, but the possibilities themselves should be seen to exist. Village communities should not only see that an improved water supply system is an answer, but should see this as something that is possible and within their means.

(4) Successful experiences by persons or communities, once they decide to act, are crucial to the adoption of innovations. According to the "law of effect" principle in learning, responses that lead to satisfaction are likely to be learned and repeated whereas those leading to a discomforting or negative state of affairs are likely to be avoided. Most of the programmes in environmental health require a series of actions performed in some sequential order. A community that decides in favour of an improved water system and takes the initial step of collecting funds should have a successful experience with the collection. If the initial attempts are thwarted, they may reconsider the situation and investigate alternative possibilities. A series of failures will influence them to abandon their goals. Health education efforts at this stage should be aimed at helping the community to increase its successes and avoid failures. The ultimate results of environmental health programmes are not immediately seen. Health education work should therefore focus on helping people to understand that every step taken is a cumulative advance towards the achievement of the final goal. In addition, it is helpful to adopt educational methods that have a heavy emphasis on community involvement and participation, since the people concerned will feel a reinforcement effect through achievements arising from activities they have planned and performed. The satisfaction of having achieved a water supply service for the village will itself help to motivate further action.

(5) "Learning by doing" is another principle to which attention must be paid in behaviour change processes. "Since learning is a change in an individual's ideas and practices, this change can be brought about only through the individual's own efforts. So long as he is passive to the situation, no learning takes place."[1] Ample opportunity for people to learn

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[1] WHO Technical Report Series, No. 89, 1954.

by doing will be provided by their active participation in various activities connected with the identification of health needs, the setting of goals, the design and implementation of educational activities, and evaluation. With the creation of more opportunities for participation, further involvement and learning will take place.

(6) Social factors such as group approval influence the adoption of new behaviour patterns. "Most individuals tend to conform with the accepted standards and sanctions of their family and friends. The tendency is to find out what is done and then do it. Group approval or disapproval may be a determining factor as to whether information is accepted or whether any action is taken on the accepted information."[1] It has been observed many times in excreta disposal programmes that families look to their peer groups, leaders, or other reference group members before they accept and use a latrine. In traditional societies most of the decisions regarding new practices are multipersonal decisions, and the role of family or other social groups are determining factors.

(7) Behaviour is motivated. Motivation is an inner drive within human beings that helps them to move forward to attain a desired goal. The degree of effort that an individual, family, or community is willing to put forth to achieve a goal will depend upon how badly it wants to reach that goal. The fundamental human needs have been classified as physiological, social, and psychological needs and the needs for security and self-expression. Health is an abstraction, and its value is determined by what it enables one to be, to do, or to acquire. A primary task in health education is to relate health behaviour to the fulfilment of people's most important needs. Both positive and negative incentives could be used.

(8) Health education is concerned with changes in knowledge, attitude, and behaviour, and the ultimate goal is a sustained health behaviour. Knowledge and attitudinal variables are intermediate goals. While, for most people, behaviour change is preceded by knowledge and attitudinal changes, it has been observed in some cases that behaviour change first occurs without change in knowledge or attitude. Where behaviour change precedes knowledge and attitudinal changes, there will be a subsequent readjustment of knowledge and attitudes as the individual "tries to establish internal harmony, consistency or congruity among his opinions, attitudes, knowledge and values."[2]

(9) Conflicting information from different sources often prevents people from following reliable health advice. It was observed in one programme that people did not want to construct privies discharging into sewerage systems because the agricultural extension agency was promoting the use of human excreta for compost manufacture and such privies did not accord with this objective, on which people placed more value. Since different agencies work simultaneously at the community level, it is necessary for them to come to an understanding in order to avoid the dissemination of conflicting advice.

(10) Psychological factors are not the only determinants of behaviour. They combine and interact with physical, social and other factors. It has been found from experience that in the promotion of any environmental health programme, simultaneous attention is to be given to educational, technical, and administrative variables. While the educational variables deal with sociopsychological factors, the technical ones relate to the effectiveness, economic feasibility, and acceptability of the proposed innovations and the administrative ones relate to accessibility and acceptability of health services.

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[1] WHO Technical Report Series, No. 89, 1954.

[2] Festinger, L. (1957) A theory of cognitive dissonance, Stanford University Press, p. 260.

2. INTEGRATION OF HEALTH EDUCATION IN ENVIRONMENTAL HEALTH

THE NEED FOR INTEGRATION

Environmental health agencies devote considerable attention to planning their programmes. The creation of planning agencies is often advocated in view of the urgent need for undivided attention to solve problems arising out of unmet needs, limitation of resources, consideration of cost effectiveness, attention to social and political factors, perspective planning, and others. It is at this stage that data are gathered, objectives set, priorities determined, and detailed programming for each activity worked out. Whatever is not included in the plan is not likely to receive much attention at the implementation stage. It is therefore essential that planning for the health education component should receive attention at this stage and become part of the environmental health plan. Assistance should be sought at this stage from the national health education service, if there is one, or from other qualified health education specialists. Educational planning, like the planning of other aspects of environmental health, would call for determination of needs, objectives, priorities, and investment in terms of manpower, finances, and other resources. Its integration with environmental health planning will provide it with the status necessary for its acceptance and implementation by field personnel. Even more important - action will not have to wait until progress is hampered for want of community participation or until constructed facilities are not used or maintained. To induce people to use facilities, in the planning and implementation of which they had no part, is very difficult. The health education component will therefore have to be built in as an integral part of the environmental health planning process.

ATTENTION AT POLICY LEVEL

An essential step for successful incorporation of health education in environmental health planning is a policy decision at the appropriate level in the government that health education components be incorporated as part of environmental health plans. Such a policy decision will have to be communicated to all those concerned with planning.

ORIENTATION OF ENVIRONMENTAL HEALTH PLANNERS TO HEALTH EDUCATION

Environmental health programmes are planned and executed in many countries by different agencies such as public works, public health engineering, health, autonomous water and sewerage boards, local bodies, and industries, often with inadequate coordination. The multiplicity of agencies and the probable lack of health orientation in many of them make it very difficult to integrate health education into environmental health plans. Some may appreciate the value of health education and some may not. The problem becomes still more complicated in cases where one agency is responsible for construction work alone, while maintenance and problems arising out of non-utilization are the responsibility of others. Environmental health planners have been stressing that all agencies connected with the planning of environmental health programmes should have health orientation. Similarly, the integration of health education with environmental health planning would call for an orientation of all concerned on the need for health education and the creation of capabilities within their agencies for its promotion. This would call for special efforts.

HEALTH EDUCATION RESOURCES FOR ENVIRONMENTAL HEALTH PLANNING

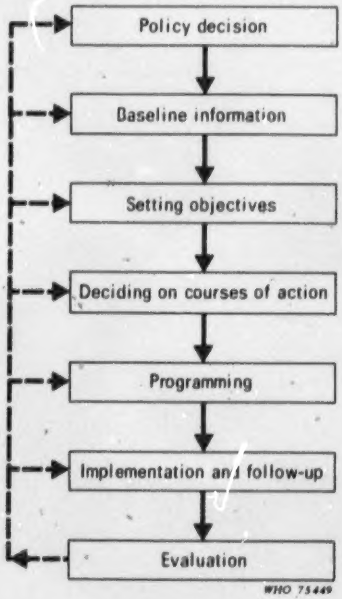
A question that will face environmental health planners, even at the beginning of the planning process, is the availability of resources for health education planning and implementation. Certain countries might have well established health education bureaux or university departments on the subject. Since the assistance needed is not limited to planning but stretches into the implementation phase and programmes for manpower development, a certain amount of investment in time and effort on an initial survey of the health education resources available and their accessibility would pay dividends.

CONSUMER REPRESENTATION IN THE PLANNING PROCESS

Planning agencies should take particular care to involve consumer representatives in the planning - whether it be in policy, administration, or operational planning. Such joint planning facilitates the development of programmes that are closer to people's needs and aspirations and enlists community participation in the implementation and maintenance phase. At the operational level especially, consumer representatives comprising both formal and informal leaders should be made responsible for a large slice of decision-making and given roles in the constructional and educational aspects of the programmes.

FRAMEWORK FOR PLANNING HEALTH EDUCATION

The generic steps for planning health education are the same as those adopted for any health programme. While these are familiar to most environmental health planners, the steps are shown in the diagram, as this provides the framework for discussions that follow.



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The generic steps represent the total planning process, including implementation and evaluation. It should, however, be noted that the planning body is generally concerned with all the steps excluding implementation. The evaluation is shared by both implementers and planners.

The generic steps would be the same for planning at any level. For example, the sanitary engineers and sanitarians responsible for implementation of programmes at the community level could adopt the same framework for operational planning.

The advantage of this concept is that the whole process becomes continuous, cyclic, and flexible. The programme, based on available information, is implemented and continuously evaluated, and the results are recycled into the system to bring about the desired modifications in plans. The process goes on until the final results are achieved.

Policy decision

The first essential step is the policy decision to make health education an integral part of environmental health planning. This must be done at the political decision-making level, and those who decide on this step should convey the authority to make the essential investments in terms of men, money, and materials for translating the policy into action. It would be of immense value at this stage to prepare a position paper indicating the need for health education in environmental health programmes and citing experiences from within the country. This paper should be circulated widely among the decision-makers to facilitate action.

Collection of baseline information

The collection and analysis of baseline information helps to establish the need for and the direction of health education for the particular environmental health activity, target groups, resources available, etc. The information should also include research findings from previous studies on behaviour change, health education methods, and media and approaches. Experiences from the fields of agriculture and adult education will also be valuable.

Setting educational objectives

Based on the analysis of information, a clear statement of educational objectives will have to be drawn up. These objectives will help to define the content for health education activities and evaluate the success of the programme.

Deciding on courses of action

This step consists in choosing the various courses of action to meet the objectives decided upon. The educational activities and efforts to be undertaken to achieve the health education objectives, the type of media that will be most useful, and the order of priorities among the methods chosen are questions that will need attention at this stage.

Programming

Detailed programming must then be done for each of the activities decided upon. Programming calls for decisions on the agencies involved, manpower, roles of persons and agencies, training, coordination, supervision, reporting, logistics, budget, etc. Finally, the programmes developed for separate activities must be synthesized into a complete plan. No plan is complete without details of evaluation being built into it, and this step calls for the specifying of evaluation indices and of the personnel who will carry out the evaluation.

Implementation

At the implementation level, further operational level planning will follow, taking into consideration the objectives and constraints fixed from the higher level and the area characteristics. When implementation involves action by different agencies, each agency should know its functions and how they are coordinated with those of other agencies.

Evaluation

The evaluation should be both concurrent and terminal, the results being fed back to the planning agency so that modifications can be made in educational procedures and methods.

The planning process, if effectively directed, can achieve two sets of objectives simultaneously, one concerned with the task and the other with education. While the task dimension of planning is easily recognized, the educational value of planning is harder to appreciate. As stated by Dr D. B. Nyswander: "The planning process itself is an educational method which has the potentialities for stressing the major psychological factors which bring about 'change'".[1] The planning process serves to motivate those concerned. They develop a team spirit and a number of aims, which they strive to achieve.

Additional information on health education planning is given in Annex 2.

GATHERING AND ANALYSIS OF BASELINE INFORMATION

Determination of the specific needs for health education

As stated earlier, health education cannot be planned in general terms or in a vacuum. It is planned as part of a specific programme or service. Basic to detailed planning is the determination of the need for health education for the particular environmental health activity and the specific groups. As an initial step, planners should obtain answers to the following questions:

(1) What is the environmental health programme for which health education activities are being planned? What are the goals and current status of the programme?

(2) What health problems are expected to be solved in full or part by the environmental health programme? Most health problems are the results of interaction between many variables

and would need multiple interventions, though certain interventions are more effective than others. A detailed analysis of the possible interventions, their effects and relative importance will be necessary. While providing for protected water supply to reduce the incidence of waterborne diseases, relevant consideration should be given to other chains of transmission involving food, vectors, excreta, personal hygiene, etc. Such an analysis and drawing up of priorities between interventions will lead to the specification of the areas for which health education activities will have to be planned.

(3) What are the nature and scope of the health problem? Epidemiological data on the magnitude of the problem, population group affected, geographical distribution, and seasonal distribution will help the planner to know where to focus the educational activities.

(4) How is the health problem perceived by health experts, administrators, and policy makers at various levels of administration in terms of (a) magnitude, (b) priority, and (c) feasibility of solution? Environmental health programmes may not receive priority attention from policy makers and administrators for want of adequate information. This is particularly true of lay administrators and decision makers, who may have to be approached through an educational programme. A study of their perceptions will help in orienting them towards the programme.

(5) What is the current level of knowledge, attitudes, and practices of people with reference to (a) the health problems for which solutions are sought, (b) the environmental health and other interventions proposed, and (c) the linkages between (a) and (b)? What importance do people attach to the problem? A programme of protecting water supply is meant to solve health problems such as enteric infections. In programming for health education, one should know the current level of knowledge and practices of people with regard to enteric infection, the perceived linkages between water and disease, the perceptions about safe water, methods of storing water, and so on. Information on the importance that people attach to the health problem in relation to their other problems will enable the planner to know how much effort will be required to get people to recognize the seriousness of the problem and take necessary action.

(6) How is the programme phased in terms of coverage, time, etc.? The phasing of the programme will enable a phased plan to be drawn up for health education, especially where health education activities have to precede a constructional programme.

Information of the kind indicated above will help planners to decide what people should actually do in relation to each programme goal. The behaviour expected might be in terms of health practices, of financial or labour participation, or of taking responsibility for the operation and maintenance of the facilities constructed. It will also help to identify the target group for each type of behaviour. Information will also be available on the present practices of people and the social, psychological, economic, and other factors that support present practices or that need to be considered when promoting new practices.

Apparent and potential resources available for carrying out education activity

Information should be collected on the following:

(1) categories of health and other development-workers[1] who could be involved in a health education programme, and their current duties, training, and background in health education.

(2) resources, other than personnel, available for a health education programme - e.g., training facilities, funds, audiovisual aids, and other kinds of equipment.

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[1] Other developmental workers include schoolteachers and those working in community development programmes.

Geographic and social data

In addition to the information listed in earlier paragraphs that should be available for national or provincial planning, certain other information should be gathered with respect to each programme area for developing a detailed plan for health education. Such information should be gathered by those responsible for implementing the programme at community level.

(1) Area characteristics and facilities - nature of terrain, rainfall and its seasonal pattern, cultivation pattern, transport, postal, educational and recreational facilities, electricity, etc.

(2) Sociodemographic particulars - particularly important will be the population, its distribution, density, religious composition, economic status, literacy level, type of housing, etc.

(3) Social and cultural characteristics of population - information will relate to people's beliefs, taboos, customs, superstitions regarding health, fairs and festivals, congregation pattern and places, etc.

(4) Power structure in the community - formal and informal leadership, social groupings in the area and intergroup influences.

(5) Level of people's cooperation - evidenced by their participation in previous programmes and the reasons why they participated or failed to participate.

(6) Channels of communication - information media such as radio, newspapers, libraries, cultural indigenous media, and other local means of communication.

(7) Felt needs of community - felt health needs and other general needs and the priorities accorded to them.

(8) Resources within area - personnel, money, and equipment from various government agencies, voluntary agencies, local bodies, and the community.

(9) Current level of knowledge and attitude of people regarding the environmental health programme and health problems.

Collection of information

The information sought under questions 3, 4, and 5 on page 12 must be available on a national or provincial basis. The further collection of such information at periodic intervals on a sample basis for the country has its value for both planning and subsequent evaluation of activities. For example, some countries that have launched national programmes in family planning are carrying out knowledge-attitude-practice (KAP-type) studies at intervals of, say, two years to find out how the programme is progressing or how people are accepting it.

Programmes in environmental health are likely to be held up for want of funds. Since public financial participation is one of the objectives to be aimed at, information on people's attitudes to public water supply and their willingness to contribute to the cost should be available at the planning stage so that health education activities can be mounted early.

It may not be necessary for environmental health agencies to create a separate machinery for collecting such information. They could contract with institutes or university departments or other agencies within the country to collect the information. What should be aimed at is to have valid information for planning, irrespective of the agency that collects it.

Some of the geographic and social data needed (page 13) are generally available from records maintained by village officials, local bodies, educational institutions, and birth, death and marriage registrars. This information has to be supplemented by discussions with leaders, representatives of social groups, community development officers, teachers, religious heads, and selected household members representing both those families that are using and those families that are not using environmental health facilities.

While it is easy to identify the formal leaders in any locality, special efforts have to be made to identify the informal ones. The informal leaders can be very influential and their participation is essential in developing health education activities. Two of the tested methods developed in one country to identify them are given in Annex 3. These methods can be adapted to suit local conditions.

Involvement of the community in the collection of data

The involvement of the community, especially through leaders, teachers, students and others, in the information gathering process will be highly rewarding in the successful implementation of health education. It will help to conserve time and money and arouse the perceptual curiosity of people, which is the first step in bringing about behaviour changes. There have been many instances where such help has been readily forthcoming, when properly approached. The leaders and others should be approached individually and in groups, informed about the purpose of the survey, and asked to participate. In fact, such involvement constitutes a sound and initial step when obtaining community participation in planning environmental health programmes.

SETTING EDUCATIONAL OBJECTIVES

Social action programmes are generally designed to achieve agreed social purposes, expressed as goals, objectives, missions, or desired outcomes. Defining goals is an essential first step in administrative planning and substantially aids management and evaluation. In health education, goals serve an additional function of being the determinants for educational messages.

An educational objective is an output arising from educational efforts. These efforts, though designed as a means to an end, will promote other values in life. Conceived as a means to an end, the ultimate objective of health education activities should be the achievement of the goals expected in the environmental health programme.

The statement of objectives should be in behavioural terms and specific. Since the success of an activity is measured by the extent to which objectives specified are achieved, care should be taken to define them clearly and to attach the necessary conditions so that they are interpreted the same way by all. A statement of objectives must necessarily include the following points:

(1) the nature of the situation or condition to be attained. For example, a reduction in the annual incidence of typhoid.

(2) the quantity or amount of the situation to be attained. For example, the annual incidence of typhoid to be reduced from . . . . per 1000 population to . . . . per 1000 population. Though it is possible to reduce it theoretically to zero, the percentage reduction aimed at would depend on the level and quality of preventive measures intended to be provided.

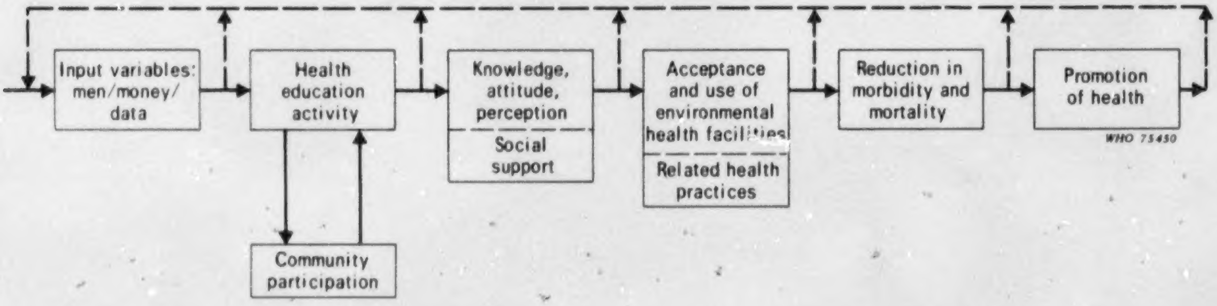
(3) the particular group of people or portion of the environment in which the attainment of the objective is desired. For example, among the total population.

(4) the geographical areas in which the objective will be attained. For example, in a specified administrative unit, district or village.

(5) the time by which the desired situation or condition is intended to be achieved. For example, over a period of two years from the installation of a water supply scheme.

Hierarchical nature of objectives

In planning and evaluating health education activities, it is useful to look at objectives in a hierarchical manner. How this can be done for environmental health is shown in the diagram. While the ultimate objective of environmental health programmes is the attainment of highest level of health, the programme can pass through a number of intermediate-level objectives before the ultimate objective is reached. The number of levels into which a hierarchical model can be divided depends on needs and circumstances.


Input variables: men/money/ data
Health education activity
Knowledge, attitude, perception
Social support
Acceptance and use of environmental health facilities
Related health practices
Reduction in morbidity and mortality
Promotion of health
Community participation
WHO 75450

The model is an input-output chain. The output at any level depends on the many previous levels of input. A common planning mistake is to fix objectives at the achievement level in terms of probable acceptance and use, while neglecting inputs and outputs at preceding levels. Looking at objectives in the manner suggested and fixing objectives for every level is helpful in that priority attention can be paid to the inputs that should come first. For example, a sanitarian can never perform his activities in health education without an earlier input of training him to perform the functions.

Input variables comprise personnel, their training, role definitions, allotment of money, availability of health education materials, etc.

Health education activity variables are made up of individual and family contacts, group meetings, leadership selection, utilization, etc.

Community participation variables (relating to the participation of people in planning and implementing programmes) can be part of health education activities or can arise out of such activities and then be fed back into them. They are singled out in the model because community participation is one of the aims of health education.

Knowledge and attitude variables relate to the changes in cognitive structure that are to be brought about by the educational programme. A fuller explanation of these variables will be found in the chapter dealing with evaluation.

A hierarchical model also helps in testing the theoretical assumptions underlying the change process. It may not be necessary for every individual to pass through all these stages because there is considerable evidence of behaviour changes preceding cognitive changes. Similarly, a gap between cognitive variables and acceptance of environmental health, if noticed, would enable the planner to search for possible administrative or technical variables that might be interacting to block progress.

EXAMPLES IN SETTING OBJECTIVES

The following paragraphs show examples of some of the objectives that might be set at various levels when the hierarchical model is applied to an excreta disposal programme.

Morbidity and mortality

(1) Reduction in incidence of hookworm infection among the age group . . . living in . . . (geographical area) by . . . per cent over a period of . . . years commencing from . . . (date).

(2) Reduction of infant mortality rate in . . . (geographical area) by . . . per cent over a period of . . . years from the date of starting the programme.

Environmental health facilities

(1) Acceptance and use of facilities

(a) Construction of household latrines in . . . (geographical area) by . . . per cent of those who have space for constructing such latrines, over a period of . . . years from the date of starting the programme.

(b) Regular use by all members (men, women, and children) of those families who have constructed latrines in . . . (area), over a period of . . . months after the completion of the construction.

(c) Proper maintenance of 100% of latrines constructed in . . . (area), the maintenance to start from the date of completion of construction. (Criteria for proper maintenance to be defined - e.g., availability of flush water in latrines, keeping latrine properly flushed, or taking steps to remove a blockage when noticed.)

(2) Related health practices

(a) Adoption of hand-washing with soap and water after defecation by . . . per cent of the population (adult men and women, and children over . . . years) in . . . (geographical area) over a period of . . . years from the commencement of the educational programme.

(b) Creation of toilet habit among children 1-3 years from those households that have constructed latrines in . . . (area), over a period of . . . years from the commencement of the educational programme.

Knowledge and attitude

(1) Increase in knowledge of the health aspects of the programme on the part of the community as a whole. Specific objectives might be:

(a) An increase from . . . to . . . per cent in the proportion of adult females living in . . . (geographical area) who can state four advantages of a sanitary latrine, over a period of . . . months from the commencement of the educational programme. (Knowledge could be on disease causation or transmission, how to construct a latrine, where latrine parts are available, etc. What is important is that criteria for knowledge should be defined.)

(b) An increase from . . . to . . . per cent in the proportion of adult males and females in . . . villages, with a favourable attitude towards the boiling of water for drinking, over a period of . . . years from commencement of the educational programme.

(2) Fostering of the support given by the community to the programme. Specific objectives might be:

(a) The attainment of the support of all groups and agencies, such as religious bodies, social and civic organizations, political parties, professional societies, occupational associations, and industrial establishments in . . . (geographical area). The support given by these groups might take the form of:

(i) discussion and approval of the proposed environmental health activities;

(ii) contributions in terms of money and volunteer time for education and service activities; and

(iii) advice to people under their influence to accept and support environmental health activities, over a period of . . . years from the date of commencement of programme.

(b) The creation of a social norm in favour of certain environmental health practices.

Health education

Health education activity variables are planned activities aimed at individuals, families, groups, and communities and designed to achieve objectives such as:

(1) The establishment of contact with at least one family member in 50% of the households that have space for the construction of latrines in . . . villages, within two months of the date of commencement of the educational programme.

(2) The identification and training of women leaders from all villages covered by the programme in . . . (area), within a period of . . . months from the date of commencement of the educational activity.

Input variables

(1) The giving of health education training to all village workers belonging to the health and community development agencies (worker categories and agencies to be specified) from . . . districts within a period of . . . months commencing from . . .

EDUCATIONAL APPROACHES

Having defined the educational objectives of the programme, the education planner will next have to answer the following question: "What educational approaches can be chosen in order to reach the national objectives decided upon?"

People vary so widely in their socioeconomic conditions, traditions, attitudes, beliefs, and level of knowledge that a uniform educational approach may not be suitable, even if the objectives to be attained are the same. Mixtures of different approaches must be evolved depending on local circumstances. The next few paragraphs discuss various educational approaches, their advantages and limitations, and their applicability to different situations. The approaches are classified as: individual and family approach, small group approach, mass approach, and community organization approach. Each of them has its own place and value depending on the circumstances, and in spite of some overlapping, each has its own unique features.

Individual and family approach

This could otherwise be called personal contact or face-to-face discussion and is flexible enough to be adapted to the individuals' needs. Individual contacts help the educator to understand and correct, where necessary, the attitudes and beliefs that an individual holds against a proposed practice, to relate the practice to the personal needs of the individual, and to identify the barriers seen by the individual in adoption and remove them. It thus helps to reach deeper into the attitudinal and motivational core of the individual. Its role extends through the entire phase of the programme, from the early phase of the educator's introduction to the community to the operational and follow-up activities. The success of the individual approach depends to a large extent on the skill of the educator in interview techniques, and some points that would contribute to successful interviews are given in Annex 4.

In most cases it is desirable to carry out the individual approach in the context of family setting. The individual forms but one member of the family and his immediate reference group is his family. A number of studies have demonstrated the importance of the members of the family in the decision making process. In many environmental health programmes, the behaviour changes are aimed at the family as a whole and not directed towards one member alone. The family should therefore be the educational target for change and visits should be planned accordingly.

Family contacts have to be planned. Repeat contacts with families spread over a period of time are usually necessary before substantial results are obtained. Experiences with research projects in environmental sanitation in India have shown that some families may need 10-20 contacts before they are ready to accept, construct, and use sanitary facilities. But every family in a community may not have to be contacted, and a priority of those to be visited must be drawn up. The initial targets for change could be the families of leaders and innovators in the community. Experience has shown that the early adopters of environmental health programmes are those from among the better educated and comparatively higher socioeconomic class. Group meetings conducted in the community will have given an indication of those families likely to be early adopters.

In a family planning programme in one country it was shown that an approach to every tenth household through individual contacts resulted in a diffusion of information to other families. As was demonstrated in the WHO-supported environmental sanitation project in Kerala, India, when a latrine is built in one house, other people from the neighbourhood can be invited to watch and those expressing interest may be the next targets for family contact. Information on early adopters can be obtained from completed consent forms for the building of environmental health facilities, the forms themselves having been circulated through community representatives. What is thus important in individual or family contacts is to arrange not for routine contacts to every household but for selective contacts, and to rely on the forces of diffusion.

Small group approach

The small group approach also provides for face-to-face interaction. It is based on the principles of group dynamics, under which the members of the group are made to think, discuss, decide, and follow-up the decision taken. Small group discussions offer certain advantages over the individual approach: they provide for (a) interaction between more people, (b) interchange of a variety of experiences, (c) a sense of participation in decision making for those involved, and (d) the much needed group support that individuals seek in their decision making. Many research findings on food practices, delinquency, etc., have indicated that it is easier to change the thinking of groups than that of individuals. The group discussion method has been widely and successfully applied in health education.

The small group approach could be applied in both formal and informal situations. The former would involve working with organizations or groups that have assumed responsibility for planning and implementing various aspects of environmental health programmes. These could be village health committees, local bodies, or special groups formed for the specific purpose. Informal group discussions could be used both as a supplement to the formal group approach or independently for reaching a larger segment of the community with educational activities.

While the small group approach is a powerful instrument for change, it could also produce opposite effects. Research in industrial situations has shown that groups have the power to increase productivity or slow down the pace. Group processes cannot be left to chance, and skilled leadership is needed to guide the group to become aware of the need for change and assume responsibility for bringing about the change.

The process of group thinking and action has its application in situations other than community settings. It can be practised in staff meetings, committee meetings, and a variety of other situations. The functioning of a group and its progress generally depend on two processes going on in the group almost simultaneously. One of them is concerned with the task in hand and the other with the desire of every member to be wanted in the group, to perpetuate his membership, to contribute, and to feel a congruity between his own goal and the group goal. The function of educators is to facilitate and build up both processes so as to achieve maximum results. Further details of how this can be done are given in Annex 5.

Mass approach

In this approach, large audiences can be reached by certain communications media in a comparatively short time. Examples of such media are radio, television, films, exhibits, newspapers, and magazines. They can be used singly or in combination. A number of studies have been carried out in the field on the effect of mass media on knowledge, attitudes, and behaviour at different levels of learning.

These studies have clearly demonstrated the value of mass media in reaching a vast audience, in creating an awareness of the programme, and getting certain messages across. The audience that might be reached by the mass media would also depend upon the media. While the use of the already available sources such as newspapers, radio, and films might reach only certain audiences, specially designed programmes can reach the majority of any large population. In an environmental sanitation project in India, it was found out that over 80% of households could be reached through film shows and public meetings.

Selective perception and retention is however found to be a limitation in the use of the mass approach. Studies have shown that a given amount of material distributed through the mass media reaches only persons who already like such material.

While mass media have a proved value in spreading information, there is no substantial evidence of its effectiveness in changing attitudes and practices. Houland and his associates, during the Second World War, studied the effectiveness of films in orienting new recruits to the army. While the films were found to be quite effective in imparting factual information and also in changing opinions, they had "no effects on the items prepared for the purpose of measuring the effects on the men's motivation to serve as soldiers, which was considered the ultimate objective of the orientation programme".[1] The studies of Greenberg and his associates on the effectiveness of pamphlets in influencing parents with respect to child-rearing practices showed that "in order to affect attitudes and practices, more must be known about how to utilize the complex psychological factors which stimulate persons to action. Also the alteration of established patterns of behaviour may be too much to expect from a single instrument".[2] Studies in India on the comparative effectiveness of the mass media and community organization approaches for promoting environmental sanitation showed that while mass media have been very effective in informing people about the programme, participation was more important in influencing people to construct and use latrines. The wide gap that exists between awareness of family planning and the adoption of contraception also shows the inability of mass media by themselves to produce behaviour changes, and there is consequently a strong tendency nowadays to integrate mass media with other methods.

One important advantage of the mass media approach is that it can present evidence of legitimization of the programme which the audience wants to adopt.

The mass approach used on a selective basis, bearing in mind the type of audience it is hoped to reach, the nature of the changes expected, and availability of media facilities, has usefulness in environmental health programmes.

To be fully effective it has to be planned as an integral part of the total educational effort and timed in sequence with other activities. The mass media approach should be followed up by community level contacts soon afterwards. Visits to the community the day following the screening of the film, in order to supplement its effects with family contacts and group meetings, have been found to be effective. Such meetings permit identification of the individual with the situation and help the process of persuasion and motivation. Such face-to-face experiences can be built around newspapers and magazine articles by asking literate members of the group to read them and lead discussions on the subject.

The following remarks of a working group on communications in family planning,[3] which summarizes the value of the mass approach in family planning, are of value in health education planning. "Mass communications cannot replace face-to-face approaches. Each has its definite and well defined objectives. Mass communications can inform, help to create a favourable social climate, counter hostile propaganda, dispel rumours, and clarify doubts and misunderstandings. They may motivate a relatively small section of the public to adopt contraceptive practices. But, for the large majority of the people, a sustained programme of education, persuasion and motivation, obviously in a face-to-face situation, is necessary."

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[1] Houland, C. I. et al. (1949) Studies in social psychology in World War II, Vol. 3, Experiments on mass communication. Princeton University Press, Princeton, p. 21.

[2] Greenberg, B. C. et al. (1953) American Journal of Public Health, 43, 1147-1155.

[3] Communications in family planning, Bangkok, Economic Commission for Asia and the Far East (Asia Population Studies Series No. 3).

Mass media sources generally available are radio, television, films, newspapers and other printed materials, hoardings and display signs, posters, exhibitions, and direct mailing. A decision on their use should be preceded by a survey to determine the public information channels that reach the largest audience, audience characteristics, and reading or viewing habits. Questions of interest in case of newspaper or magazine readers would be: Who are the readers? Which papers do they read? Which columns do they read? For television and radio, questions on most favourite programmes would be included. The answers to these questions will facilitate the choice of media that are most appropriate to reach the target group. Where the programme is aimed at the entire public - for example, to arouse an interest in air pollution - the most widely reaching channels could be chosen. Some form of indigenous cultural media will exist in most communities. Since these are culturally acceptable ones to the local population, efforts should be made to use them. In a project in India environmental sanitation dramas enacted by the village group were found to be a very useful and attractive medium. Similarly, exhibitions held at schools were found to attract large numbers of people and contributed to an increase in knowledge.

Educational aids should be designed to suit specific audiences for specific conditions and tested before use.

Further details about the mass media are available in Annex 6.

Community organization approach

Under this approach consumer representatives and professionals jointly study health problems of the community, pool experience, knowledge and resources, and develop ways and means by which health problems can be solved. The community organization approach combines the individual and small group approaches, and may include the mass approach, according to circumstances. The approach is not new. It existed in some form or other for centuries and is being used even now by many communities to organize religious festivals, collect finances, lay roads, and carry out many activities of communal interest. Its application to the field of organized community health and as a means of facilitating new health practices started with the development of professional health education. The community organization approach rests on the principle of encouraging the leaders within the community to assume responsibility for identifying and solving health problems. Programmes developed are perceived by the community as locally planned and given more credence than those superimposed by outside agencies. The community then assumes greater responsibility for the maintenance of facilities in order to prevent its efforts being wasted.

The community organization approach provides a very powerful tool for environmental health planners, by means of which they can increase the coverage under environmental health protection by enlisting voluntary contributions and bringing about lasting behaviour changes. In planning to adopt this approach, one should pay particular attention to certain essential elements, which are described in the following paragraphs.

(1) Both the community and the environmental health agency responsible for implementing the programme should develop a mutual trust. The community should perceive the agency and its workers as truly interested in their welfare and progress, and the agency should have belief in the inherent capacity of community representatives to think and plan wisely. It is often found that leaders, though illiterate, are much more proficient community organizers than qualified professionals without experience. Mutual trust becomes difficult when the community has had negative experiences with the environmental health agency or its workers or sister agencies before. The only way to overcome such a problem is to establish contacts that will create understanding, to demonstrate the interest of the agency through deliberate acts, and to involve people in planning. An agency should not make promises to the community that it cannot fulfil, either by its own efforts or through the efforts of related agencies.

(2) Agency workers should make deliberate efforts to reduce the social distance that people perceive between themselves and the workers. Learning and practice of community dialects and customs, participation in the social activities of the community, calling at homes of community representatives occasionally, treating people nicely when they come to agency offices, and adoption of an acceptable mode of dress are some of the means by which social distances can be reduced.

(3) Use should be made of committees to enlist community participation in planning and implementing the environmental health programmes and related health education activities. The number of committees formed, the levels at which they operate, and their membership will be governed by local circumstances. In any case, it is useful to have one central planning and coordinating committee consisting of representatives of the environmental health programme, sister agencies, and the community. The sister agencies that should be represented are those of, for example, community development, agriculture, health, and education. Among community representatives preference is to be given to those from business, political, religious, and occupational groups. This main committee may be assisted by subcommittees formed on an area basis, taking the wards or group of wards as units in urban areas and geographical population units in rural areas. A linkage should be established between the main committee and subcommittees through joint membership. While the main committee may devote itself to overall planning, pooling of resources, coordination and evaluation, the subcommittee may concern itself mostly with implementation aspects in its geographical area. Experiences of forming a single subcommittee to represent different geographical units in rural areas of developing countries have not been successful, in view of the difficulties in mobility and concern of leadership mostly with the problems of their own areas.

Before forming new committees, the possibility of using any of the existing local committees constituted for other developmental or general health programmes should be explored. Where such committees exist they could be persuaded to take responsibility for environmental health programmes also and if necessary to form subcommittees for this specific purpose. A general village development committee with overall responsibility for various programmes and subcommittees with specific responsibility for particular programmes will be more advantageous than entirely separate committees for different programmes.

(4) When forming committees, planners should take care to see that participation is from all sections of the community. "To ignore opposition is a sure way of increasing opposition and to talk with enemies is the best way of getting their consent, if not their cooperation."[1]

(5) Special attention should be paid to leader identification, especially the informal ones. Simple sociometric methods that could be adopted by field workers for leader identification are given in Annex 3. Experience gained in environmental sanitation projects in India has shown that Indian women have an active role to play in the promotion of environmental health programmes. The use of facilities and the introduction of related health habits depends on their willing cooperation. In all cultures, steps should be taken to identify women leaders and to utilize them in health education activities.

(6) Leadership training as a method of developing the capacity of leaders in programme planning has been successfully adopted in many areas. Experiences have shown that an initial one day session, followed by others, as and when indicated, is sufficient, and conducting the sessions outside their immediate surroundings ensures the undivided attention of participants and lends importance and authority to the programme. Such sessions help in building rapport, exposing participants to the programme, and defining their roles. These meetings should be held separately for men and women leaders if local circumstances warrant such procedure.

(7) Adoption of the community organization approach may bring forth the problem of meeting immediate felt needs of the community, not necessarily related to environmental health. People sometimes reject environmental health programmes not because of their lack of interest in them but because they perceive other needs as being more pressing. To insist rigidly on "selling" environmental health programmes under such circumstances hampers the acceptance of the worker and the programme itself. While environmental health workers cannot satisfy these needs directly, they can assume a certain responsibility in helping the community to find a way of satisfying them. Working in close collaboration with the health and other development agencies will help in such circumstances because the environmental health worker can bring about a liaison between those workers who can satisfy the needs and the people. By demonstrating such readiness to help, the worker gains not only people's confidence but increases the chance of success of the programme.

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[1] Krishnaswamy, K. S. & Ramakrishna, V. (1958) Health education and environmental sanitation. Swasth Hind, 2, 284.

(8) The phasing of the delivery of various services will also influence their acceptance. It has been the experience that among environmental health services, water supply is always perceived by people as one of their more important felt needs – more important than waste disposal or vector control. Water supply projects can be planned and implemented in a shorter time than projects for the disposal of waste-water and excreta. It is therefore preferable to develop the water supply project first and follow it up by programmes for waste-water disposal, with priority for excreta disposal programmes. The phasing could however be changed to suit local conditions.

(9) Intra- and inter-agency coordination is essential to the success of community organization efforts.

(10) Conditions that may interfere with community actions may have to be recognized early so that efforts to overcome such barriers can be taken in the planning stage. In one community, where two groups of people opposed one another on any community action, the advice of the leaders of both groups was sought on how the programme could be introduced in the community. A discussion in which both the groups participated resulted in cooperative action and to some extent reduced the tension that had previously existed.

(11) Mass media, when it is planned to use them, should be integrated with the local educational efforts and the use of the media should be properly timed. In one case the community representatives decided to collect a substantial sum, equivalent to 25% of the cost of the water supply project. They wanted a film show on water and health to be arranged in the community before they went from door to door for fund raising. Exhibitions, dramas, etc., may similarly be arranged to fit into the different phases of activity. In another case, pamphlets were used to educate schoolchildren on the importance of constructing latrines in their houses. Later they were asked to take them home and read them to their parents and explain to them. This preceded family contacts and group meetings on latrine construction.

(12) Participation in some type of activity by as many members of the community as possible is a key to the success of community organization efforts. Opportunities for enlisting such participation exist in all environmental health programmes and should be made use of. Distribution of responsibility among people for fund collection, obtaining labour participation for constructional activities, taking responsibility for collection and storage of materials for latrine construction, use of trained volunteers for selection of site and supervision of construction of domestic environmental health facilities are some of the ways of enlisting such participation. Similarly leaders and others could be given responsibility for educational activities like making family contacts, arranging and conducting of group meetings, exhibitions, screening of films, etc. In one case, volunteeers were used to distribute themselves among the audience during a film show on hookworm to elicit answers on what people learned from the film.

(13) Local talents should be used to the greatest possible extent in most of the educational activities. Experiences are many where senior schoolchildren, with assistance from their teachers, organized themselves into a dramatic troupe and gave performances in selected communities. Competition among teachers and others in the community to produce scripts for dialogues, songs, drama, etc., have often produced excellent results.

(14) An early demonstration by the environmental health agency of the effectiveness of the methods advocated should receive attention. A project in India in environmental sanitation concentrated on the construction and maintenance of a few latrines in selected households in the early phase of the programme to remove the existing misconceptions of the people about latrines. These served as models for diffusion of information about latrines. In another instance the people of a particular community had organized a system of constructing masonry cisterns for collecting waste-water from their homes. Those cisterns were emptied periodically and at a huge cost. An examination of the soil strata in the area showed that seepage pits would be ideal for the disposal of waste-water from individual homes. To carry conviction to the community on this method, three seepage pits were initially constructed with their consent and put to use for three months. The people immediately learnt of the advantages and converted all cisterns into soak pits, thereby saving money that they were spending on an unsatisfactory system.

(15) Rewarding community representatives for their support should be built into the educational programme. Monetary rewards should normally be ruled out and emphasis placed on meeting higher level psychological needs. That participation in the programme helps leaders to build their rapport with the community should be sufficient motivation for most of them. The planning process under which leaders play an active role in decision making provides another source of psychological satisfaction. Making community representatives preside over functions, entrusting them with responsibility to publicize their activities, taking visitors around, bringing people from areas of comparatively poor response to places where good work is going on and issue of merit certificates, are rewards that may be built into the educational system.

(16) The development of programmes in communities, starting with the more responsive communities and later extending them in phases to other communities, has been found to be particularly useful in sanitation, family planning, and immunization programmes. Such a process aids in the diffusion of successful experiences. The planners have to evolve criteria for selecting responsive communities based on local conditions. The criteria for responsiveness developed in India for initiating sanitation and family planning programmes in rural communities are: (a) previous experiences with health and community development programmes, (b) absence of dominant factions, (c) the presence of cooperative leadership, and (d) absence of important felt needs that are likely to interfere with the programme in hand.

(17) In planning educational activities consideration should be given to the amount of free time that people have, the availability of cash, and their ability to undertake construction. Experience has shown that labour participation from people should be sought during non-agricultural seasons, because construction is more likely to be undertaken after harvests when people have both money and leisure.

(18) People are likely to attach greater value to and use those facilities for which they have made contributions in terms of money, labour, or time. It is desirable to take this into consideration when planning for provision of basic sanitary services.

TARGET GROUPS AND EDUCATIONAL APPROACHES

It is difficult to prescribe uniform methods that could be used to educate different target groups in a population. The methods chosen would be determined largely by factors like cultural differences, levels of education, perception about health problems, proposed solutions, readiness to accept innovation, competence of personnel, and cost factors. Illustrated below are some examples indicating broad generalizations in the selection of educational approaches and methods.

The provision of basic sanitary services in areas where they are lacking has been of great concern to environmental health personnel. This problem embraces two-thirds of the world's population and is distributed within the urban and rural areas of developing countries, the rural population consisting of 72% of the total. Certain characteristics of this area and population are evident. They are usually economically backward, the level of literacy is low, and the people do not demonstrate an immediate readiness to accept innovations. Their customs, beliefs, and practices are centuries old and socially approved. The governments lack adequate resources, in terms both of money and trained manpower to plan and implement programmes. The environmental health services that could initially be provided to most of these communities cannot be those that are technologically the most effective. For example, it is impossible to provide initially a protected water supply that is continuous, adequate, and available within people's homes. The educational programmes have therefore to place adequate emphasis on factors like personal hygiene so that maximum health benefits are derived from environmental health investment. Financial and labour participation is difficult to achieve, but such participation is imperative to ensure a reasonable coverage of the population with basic services in the foreseeable future. The target groups for education consist of the entire community for whom programmes are planned, influential groups, political decision makers, administrators, and schoolchildren.

Appropriate educational methods are shown below, the list being illustrative and not exhaustive.

Target group	Educational methods
(1) Political decision makers, administrators, etc.	Individual contacts, seminars and group discussions, supply of literature, observational visits within or outside country.
(2) Village leaders	Individual contacts, group meetings, participation in committees to plan and implement programmes, leader training camp, observation visits to see on-going programmes, supply of literature, participation in educational programmes aimed at the community, demonstrations.
(3) Organized groups	Individual contacts, group meetings, film shows, supply of literature, demonstrations, training camps.
(4) Outpatients in a health centre	Individual instructions by physicians, nurses, etc., small group meetings, demonstration of sanitation facilities in the health centre, posters, simple messages written on the blackboard and exhibited at outpatient clinics.
(5) Village community	Family contacts, small group meetings, film shows, public meetings, exhibitions, visits to houses/places where construction is going on, participation in community educational activities and constructional work, messages delivered through schools.

In urban areas problems might be different. Some areas are so highly developed that the community demands, pays for, and utilizes all services. In other cases, the community has to be educated not only to participate in the provision of sanitary services but also to utilize them. In one large urban community, the local authority wanted to expand their existing water supply scheme, but the expansion could be financed only through repayable loans, which called for decisions by the local authority to raise taxes to repay the loan. At this stage the political decision makers backed out for fear that the raising of water taxes might not be supported by the public. In another area, the problem was to influence people to connect their domestic waste-water disposal facility to public sewers. Individual and small group approaches were effectively used to educate political decision makers. The mass approach is ideally suited to reach the public and educate them on the health benefits of a protected water supply and the need to pay for it. Slums and fringe areas of urban towns constitute still more difficult problems. Experience has shown that community organization approaches are more suitable in solving the problems of slums and fringe areas.

The target groups for educational programmes for food sanitation are the owners of food establishments, food handlers, and the general public. Individual and small group approaches and special training courses should be adopted to reach the first two groups, while mass media could be adopted to reach the general public, the target being carefully selected to reach those who make use of the services. Creating a public demand for improvement of hygienic conditions in food establishments is an essential factor in the success of health education in food sanitation. Training for food handlers through organized sessions must be an essential supplement. Wherever food sanitation laws do not exist, the target population must be the policy makers responsible for framing and passing these regulations.

SELECTION OF EDUCATIONAL METHODS BASED ON THE CHANGE PROCESS WITHIN THE INDIVIDUAL

While social scientists have evolved many models to explain the process of change within individuals, the one based on the concept of stages in the adoption process[1] provides the most useful guidelines on the selection of educational methods appropriate to the different stages of the programme. According to this model, people appear to pass through a series of distinguishable stages before they adopt a new practice and a decision to adopt or reject is usually the result of a series of influences operating through time and the different stages. These stages are:

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[1] Lionberger, H. F. (1960) Adoption of new ideas and practices. Ames, Iowa State University Press.

(1) Awareness. At this stage, the person comes to know about the new idea or practice. He has only some very general information about it and knows little about its usefulness, limitations, and applicability to him.

(2) Interest. This is the stage when the person seeks more detailed information about the practice, how it works, and what it will do. He is willing to listen or read or learn more about it.

(3) Evaluation. During this stage, the person weighs the pros and cons of the practice based on information gained so far and evaluates its usefulness to him or his family. Such evaluation is a mental exercise and results in a decision to try the practice or reject it.

(4) Trial. This is the stage when the decision is put into practice. He would need additional information and help at this stage so as to overcome the problems in implementing the idea.

(5) Adoption. At this stage the person decides that the new practice is good or bad for him and continues to use it or rejects it. Difficulties that occur during continued use will have to be solved.

While using the model it should be noted that these stages are not necessarily a rigid pattern or a set of exclusive and discrete categories with no overlap. They may not be universally applicable to all people in all their decisions, and there might be skipping of stages. It is also found that in the same community there are people who might be in different stages of the adoption process. For example, there would be some persons who have heard about the practice before and are only waiting for help in order to try it.

While the above is the case with individuals, it has been found in communities that everybody does not adopt new ideas or practices at the same rate. Adoptions are usually slow at first and increase until a vast majority have accepted the practice, and then the process slows down. The majority lies between the early adopters and late adopters. However, there can also be variations. In the project on environmental sanitation in India it was found that adoption followed a cyclic pattern. Initially some accepted the practice; this was followed by a lull, and the adoption again picked up after a renewal of the educational efforts.

Educational methods appropriate to different stages of adoption

Assuming that most individuals pass through some or all the various stages in the adoption process, it is useful to think of the educational methods appropriate for each stage. As already stated, the application of these methods will depend on the stage the individual or community has reached. Where the project is newly introduced, one might start with methods of creating awareness. Where the programme has been going on for some time, methods relevant to other stages might be more appropriate.

The major objective during the initial two stages - awareness and interest - is to provide both general and specific information regarding the proposed services. Two of the specific target groups at this stage are the village leaders and general public. Village leaders could best be approached through individual contacts. Where they are able to read, the use of literature (e.g., pamphlets and folders) will be of value. Group meetings of village leaders would facilitate additional exchange of information on the subject. Visits by leaders to places where successful programmes are being implemented will be another method useful at this stage.

Individual contacts with every household might be time consuming. However, visits to households for gathering baseline information could be used as an opportunity to generate the initial curiosity. Contacts established with village leaders will have a snowballing effect. In addition, mass media, where facilities are available, could be utilized to create awareness.

Film shows, public meetings, and exhibitions are useful and could spread information in a short time. Discussion about the programme in schools can convey information to parents through pupils.

The major objective of education in the stage of evaluation is to help persons and communities to relate the practice to the satisfaction to some of their felt needs. Education has to penetrate into the attitudinal and motivational cores of the individuals. Barriers have to be recognized and solved. Group support has to be generated to enable individuals to adopt new practices. The most appropriate methods are individual contacts and group meetings. During individual contacts adequate time should be devoted to discuss and solve individuals' fears and to surmount possible obstacles that might be perceived in making a decision to try. In group meetings, innovators and adopters should be brought along with others. In addition, meetings of social groups in the villages should be held so as to generate their support for the programme.

During the trial stage, individuals should again be helped through personal contacts. A family deciding to construct a latrine may still face problems connected with site selection, procurement of materials, technical assistance for construction, and finance. These problems should be recognized and solved through individual contacts. Small group meetings centred on the places of construction are of great value. Village communities should be encouraged to meet and solve problems connected with construction. Adopters and others should be brought together.

Educational activities are to be continued through the adoption process. It has been found in many cases that a family, after construction of a latrine, needs information on how to use it, how to flush it, how to clean it, and how to remove blockages. These are matters that need immediate attention. In the longer run they should be taught what to do if a pit collapses or gets filled up. In one instance, there was a large-scale collapse of latrine pits after the rainy season, and the absence of facilities for this type of maintenance spoiled the programme. Suitable educational approaches would be individual contacts and work with committees concerned with maintenance. People should also receive reinforcement to continue with habits, and this could be done through mass media messages suited for the purpose. Again, dramas could be enacted using the school as the channel. Village leaders may be entrusted with responsibilities for continued education and maintenance. Other members of health teams and development agencies have a useful role at this stage as part of their routine work. A nurse-midwife who visits the family for domiciliary care should be encouraged to see how the latrine is being used, how drinking-water is being stored, etc.

SETTINGS FOR EDUCATING TARGET GROUPS

Exploring and utilizing existing settings for the education of target groups will economize on expenditure and effort. Apart from the family, school, and community discussed so far, a number of other settings could be utilized.

Health centres, clinics, hospitals, and other medical institutions

Patients attending health centres, clinics, etc. for treatment of water- and excreta-borne diseases can be educated to adopt preventive measures. In view of their close interrelationship, environmental health education can be integrated with maternity, nutrition, well-baby clinics, etc. There is scope for both individual and group approaches. Utilization of these settings would need advance action to

(1) obtain prior administrative clearance from those concerned;

(2) arrange orientation sessions for the health centre/hospital staff in order to help them identify opportunities for health education on environmental health, to understand the links between environmental health, nutrition, infant mortality, etc., and learn about the educational content; and

(3) supply equipment and teaching material.

In one instance, for the education of patients, a demonstration centre containing life-size models of environmental health facilities for families and communities was constructed in a rural health centre. The international postpartum programme, which is a part of family planning services, utilizes maternity hospitals as a setting for education and services. These hospitals use mass information facilities tailored to hospital needs in addition to group and individual approaches.

Organized groups in the community

Most communities have organized groups formed to meet different purposes. Examples are religious groups, political groups, occupational groups, teachers' associations, youth clubs, mothers' clubs, etc. Dissemination of information to these groups and through them to their peers and the community as a whole, has many advantages. Environmental health personnel should build up personal relationships with the heads of the groups and arrange for information sessions for their members, either as part of their usual meetings or through specially arranged sessions. Group leaders and members should be encouraged to set an example in environmental health practices.

Educational programmes organized by other agencies

Community development programmes are part of the overall development strategy in many countries, and educational sessions on functional literacy, nutrition, agriculture, etc., fall within their regular schedule of activities. Efforts should be made to integrate health education for environmental health into these activities.

As stated earlier, the necessary administrative clearance should be sought and orientation sessions arranged for those in charge.

Industrial settings and other organized sectors

Industries are becoming increasingly concerned with the welfare of workers. Some countries have regular programmes for worker education and the preparation of worker teachers, which provide opportunities for environmental health education. They could, for instance, be enlarged to include the educational aspects of basic sanitary services, the effects of the factory environment on health, and the effects of the industry on the outside environment through the pollution of water and air with industrial wastes. Rail transport workers and the armed forces, which have their own sanitation establishments, are further examples of organized sectors that could be utilized for health education.

Professional organizations

Any programme for the improvement of environmental health and related health education activities should receive support from the allied professional organizations in the community. These organizations command wide influence and their support in favour of the activities should be enlisted. Advice from a medical practitioner to his patient suffering from hookworm on the construction and use of sanitary facilities will have more value than the distribution of considerable quantities of literature.

ORGANIZATIONAL CONSIDERATIONS

Staffing

The divided responsibility for environmental health planning that exists in many countries between various government agencies in the absence of a central coordinating unit makes health education planning difficult. The strategy adopted in this guide is therefore to deal with the various organizational aspects of health education planning, and the manner in which they are integrated into the environmental health system will be circumstantially determined.

The foremost organizational consideration is the administrative responsibility for integrating health education into environmental health plans and services. The environmental health agency should assume the primary reponsibility in this respect and technical assistance may be sought from national health education services where they exist or from other agencies.

The second consideration is the responsibility for carrying out health education activities. A principle to be accepted is that health education is primarily the responsibility of those engaged in the promotion of environmental health services, particularly engineers, medical officers, and sanitarians. Health education should become part of the routine activities of these personnel. The assignment of health education activities to other agencies, with the environmental health agency taking responsibility only for constructional work, is not viable. Whatever support the environmental health agency may need to enable it to carry out this function must be provided for in planning.

The third consideration is the administrative levels at which health education must be strengthened by creating the capability to carry it out. The first level, undoubtedly, is the planning level. Since the major function at this level is the determination of needs, objectives, methods, manpower, activities, evaluation, etc., the services of a health education specialist should be available. The next level is that of programme implementation. Programme implementation teams usually consist of two tiers of personnel, one in direct contact with the community and the other their immediate supervisors. The teams are made up of personnel such as sanitary engineers, physicians, sanitarians, engineering supervisors, and sanitary assistants. While the team members are responsible for implementing planned health education activities, steps must be taken to ensure that they have the time and capacity to carry out their allotted functions. Most environmental health projects do not contain a built-in health education component and the norms for appointment of personnel are generally based upon the construction workload. These norms need reconsideration at the planning level, especially with respect to those categories of personnel that share most of the health education workload at community level.

Much may be gained by adding the services of full-time health education specialists to major construction projects or groups of projects. Environmental health agencies are now moving towards the establishment not only of central but also of regional agencies that would be in charge of integrated environmental health programmes for the geographical area concerned. Health education could be strengthened at these levels by the services of specialists, who would assist in planning, training, and evaluating functions. Expenditure in this regard will be more than repaid by the increased health benefits that would accrue from health education and by public participation in terms of financial and active support. A combined project for water supply and waste-water disposal may cost about $ 30 million for a population of 500 000, while the expenditure on health education is unlikely to exceed 1-2% of this cost, assuming a period of five years for its completion.

Another important consideration is whether the environmental health agency should have its own independent establishment for health education or whether it should depend on a centralized health education service for personnel and advice. While there are certain practical and psychological advantages in the former policy, there are also many disadvantages. One major difficulty would be to provide for career opportunities and keep the personnel contented. In the absence of an adequate number of qualified health education professionals in the country, such competing demands may end in the recruitment of inadequately qualified personnel. Competition between independent organizations for the use of some mass communication channels, facilities, and resources may lead to duplication of efforts and wastage.

There are certain activities that have necessarily to be coordinated with a central health education agency to avoid duplication of effort. These are manpower training, school health education for environmental health, and the production of audiovisual materials. If there are well established health education training centres for health personnel, much would be gained by utilizing them for the training of environmental health personnel by whatever strengthening that may be needed. The same consideration applies to school health education and the production of audiovisual aids.

There are other advantages in coordinating the work with a centralized health education agency and getting personnel seconded from it. It will ensure the much needed technical guidance and supervision of personnel. A central health education service would ensure comparable technical and administrative standards for recruitment, training, and employment of health education staff maintained throughout the health organization. In addition the services of behaviour scientists and research workers normally available within a centralized agency would also be available to an environmental health agency. Coordination with other departments of health will also be facilitated by this process.

A comparison of advantages and limitations thus tilts the scales definitely in favour of active technical collaboration with a centralized health education agency through seconding of personnel, technical guidance, coordinated manpower development programmes, and media development.

A precondition for such collaboration would, of course, be the presence of a centralized health education service and its capacity to meet the needs. The formation of a central health education service has been considered in detail by a WHO Expert Committee on Planning and Evaluation of Health Services.[1] The Committee recommended that such services should exist not only at the national level, but at other intermediate levels of health administration. The functions of such a service at various levels has also been spelt out in detail. The effectiveness of a similar arrangement in the planning and development of health educational aspects of family planning has also been recommended by a WHO Study Group on Health Education in Health Aspects of Family Planning.[2] What is important is that a centralized service for health education should take account of the personnel requirements of specialized programmes, current and future, when plans are made for the development of the service.

Another consideration is the utilization of personnel belonging to health and other development agencies for health education in environmental health. Examples are the personnel working at the community level in such programmes as maternal and child health, family planning, malaria control, and smallpox eradication. The present trend in most developing countries is to have multipurpose health workers at community level. These workers maintain close contact with their clients and could be very effectively used for health education in environmental health by prescribing these functions as part of their routine duties.

Agricultural extension workers could be similarly utilized. They have a good rapport with the community since they are able to be of immediate assistance in satisfying felt needs. Other categories of development workers are available in both urban and rural areas. The environmental health personnel should reciprocate by being of help to other agencies.

Role definitions

Plans should specify role definitions of workers and agencies in health education activities. Roles of other agencies should be decided in consultation with their chiefs and communicated by them to the operating levels. This is necessary, because the environmental health agency will be coordinating with those over whom they have no administrative control, and an official sanction would be needed before the operating levels can act.

Coordination

While intradepartmental coordination will normally be taken care of by the supervisory levels in the agency, coordination between agencies that lack administrative control over each other is difficult and has to be achieved through the mechanism of coordination committees, individual contacts, staff meetings, etc. Health education for environmental health will, for the most part, be a multiagency effort.

The first level of concentration to achieve coordination should be the planning level. Representatives of participating agencies should be involved, especially when their roles are discussed. The usual practice is for the programme agency to define the roles of other agencies and request their cooperation, but such procedure rarely produces results. The involvement of consumer representatives in the planning phase will result in better coordination with the community during the implementation phase.

Decisions on structure for coordination at various implementing levels should become part of the plan. The levels at which committees will be formed and the membership and functions of the committees are to be defined. In all cases, the operating level chief of the programme must have powers for co-opting additional members depending on local circumstances.

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[1] WHO Technical Report Series, No. 409, 1969.

[2] WHO Technical Report Series, No. 483, 1971.

While provision for coordination committees is made at the planning stage, the functioning of the committees depends on the leadership exercised by those responsible for coordination. The "human relationship factor" (not only within the working situation but outside it), an understanding of each other's work, and respect for each other's jurisdiction are essential for effective coordination. Annex 7 gives guidelines to help programme personnel to conduct committee meetings in a way that will produce maximum results.

Every agency conducts staff meetings at fixed intervals to plan its programme. Environmental health personnel entrusted with coordination should know the time and place of meetings of those agencies with whom they have to coordinate, and they should attend these meetings whenever possible and discuss the progress in implementation of the programme. Coordination can also be achieved through personal contacts, joint field visits to understand how work is done, and development of joint plans to meet needs and solve problems.

Coordination should be sought not only with health agencies, but with community development agencies, voluntary bodies, insurance companies, and educational institutions.

Audiovisual equipment and aids

During the planning phase, decisions should be made not only on educational approaches, but also on the procurement and distribution of the audiovisual equipment and aids necessary for their implementation.

In many countries, the central or provincial governments may have created their own publicity departments. In addition, bodies such as health education bureaux, community development departments, and programme agencies for malaria and family planning might also have publicity wings. It is useful to carry out an initial survey to collect information on these agencies and their publicity programme, details of audiovisual equipment manufactured in the country, maintenance services, and audiovisual aids already available in the field of environmental health. The planners could then decide whether they can make use of existing agencies by supplementing their efforts. Attention to some of the following points will be helpful.

(1) The possibility should be explored of administrative coordination with some of the existing agencies to make use of their publicity units for educational efforts in environmental health. When an operating programme needs equipment it should be available free or on payment of fixed charges. The environmental health agency should ensure that an adequate quantity of health education media is made available.

(2) Films are a widely used medium for health education. Two types of films are useful - one for training purposes and the other for public education. Most countries, however, do not have films that take account of local cultures. The assistance of health education bureaux may be sought in scrutinizing scripts.

(3) Certain other aids such as filmstrips, flash cards, flannelgraphs, pamphlets, and posters will be useful. Most health education bureaux have production units and an endeavour should be made to obtain the materials produced by them. The budget of health education bureaux might be augmented by a suitable provision from the environmental health programme budget to meet the cost of production of materials. In case of emergencies, the assistance of other agencies or private producers could be sought.

(4) Many programmes are now developing photographic exhibition kits that can be easily transported. These, with a few other demonstration models locally made, could constitute the components of an exhibition unit that could be mounted in any area with ease, dismantled, and reused. The development of such kits might be considered at the planning stage.

(5) It is common experience that considerable delay often occurs in the movement of materials from the production site to the places where they are used. Attention may be necessary to streamline the distribution system.

(6) Provision should be made for the training of staff in the use of media and equipment.

Transport

Since health education activities in the community have to be timed to peoples' availability, which extends beyond normal office hours, the plans should make provision for transport facilities. Where common transport is provided, small sturdy vehicles suited to village roads will be preferable.

Leaders' training camps

The value of training community leaders to enable them to develop their leadership capacity for active participation in programme planning and implementation has been stressed. This would need the provision of a contingency budget to take care of training expenses, including light refreshments for participants.

Setting examples

Environmental health personnel and public institutions can promote health education through example setting. A sanitarian who does not practise the behaviour he preaches is not likely to carry any conviction with the community in bringing about changes. The workers should use the facilities, and administrators have a responsibility for providing them. The following principles arose out of the experience of a project in environmental sanitation. The success of a programme is governed by:

(1) the extent to which the technical workers themselves possess and use latrines.

(2) the policy of constructing latrines and water supplies for all schools and of carrying out an intensive educational programme on the use and maintenance of facilities in every school.

(3) the extent to which use is made of all village leaders' camps, all meetings and all other gatherings in the area in order to give instruction in the use of sanitary latrines.

(4) the policy of never providing public latrines where household latrines are possible. Where public latrines are needed, arrangements for maintenance are essential, because poorly maintained public latrines influence people against them.

Continuation of education after construction of facilities

Health education should extend beyond the constructional phase in order to help people maintain the facilities built and to solve problems arising out of maintenance. The procedures to be followed when pumps break down, when latrine pits are filled up or closets blocked, when seepage pits become choked, and when school environmental health facilities are damaged are matters of importance to a community that accepts innovation for the first time, and solutions to these problems should be provided at the planning stage.

Budget

"The lifeline of the health education programme, as of any health activity, is the availability of funds with which to finance it."[1] All environmental health programmes should make a provision in their budget for financing education activities. Budgetary provisions are to be made for:

(1) personnel and their training (details of training are dealt with in Section II).

(2) procurement or production of audiovisual aids and equipment, for their maintenance, and for the utilization of mass media facilities, etc.

(3) contingencies, including stationery, printing, transport, training, postage, etc.

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[1] WHO Technical Report Series, No. 156, 1958 (Report of a WHO Expert Committee on Training of Health Personnel in Health Education of the Public).

At the planning stage consideration may be given to priorities in spending. "There is frequently a lack of balance between the relatively large amounts of money spent on the production of costly media and materials, such as films and exhibits, and the funds allocated for other important aspects of a balanced educational programme. Attention is drawn, for example, to the importance of placing high priority on the establishment of training courses in health education of the public for professional health workers, educationalists, auxiliary personnel, voluntary community workers and others. Ultimate success depends on the availability of and quality of the personnel trained to carry out health education functions and responsibilities."[1]

The provision under personnel and training should receive a high priority in the allotment of budget under health education.

There is no existing yardstick to suggest a percentage of the environmental health programme budget that might be allotted to health education. The detailed planning of health education activities will provide a basis for this. It is understood, for example, that the Government of India allots about 8-10% of the programme budget under family planning for extension education and mass media. Funds may be available under general health education for the country or province, part of which will also be available for environmental health. Efforts have to be made to obtain financial allotment from local bodies, industrial establishments, and others concerned with environmental health improvement.

EVALUATION

Plans for evaluation are an integral part of the programme plan and must be built into it. It is the administrator's most effective tool for testing programme premises, planning, and improving programme performance. To be effective, evaluation has to be based on objective data and a careful consideration of all relevant facts.

Evaluation can serve many purposes other than the measurement of objective output and programme efficiency. An excellent summary of evaluation as applied to health education has been given by Dr Beryl Roberts:

> We evaluate to aid future planning and to improve programmes - to increase our understanding of health education practice, to add to the body of knowledge upon which work is based. We evaluate to help achieve operational efficiency and related to this, to obtain data that permits interpretation of programme effectiveness so as to obtain administrative support, community support, even financial support. We evaluate for reasons associated with motivation - to give staff and volunteers satisfaction, and a sense of success. To give priority to these purposes . . . We evaluate primarily to study the effects of practice so that we can turn our findings back into practice and improve it and, at the same time, strengthen the scientific basis for practice in health education.[2]

Nature of evaluation process

Evaluation is the "process of determining the value or amount of success in achieving a predetermined objective".[3] It is part of the planning-implementation-evaluation-feedback cycle in which "actions and their results are assessed against norms and criteria in order to select among alternatives for the future".[4]

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[1] WHO Technical Report Series, No. 156, 1958 (Report of a WHO Expert Committee on Training of Health Personnel in Health Education of the Public).

[2] Roberts, B. J. (1962) Concepts and methods of evaluation in health education. International journal of health education, 5, 52.

[3] American Public Health Association (1968) Family planning - a guide for state and local agencies. New York.

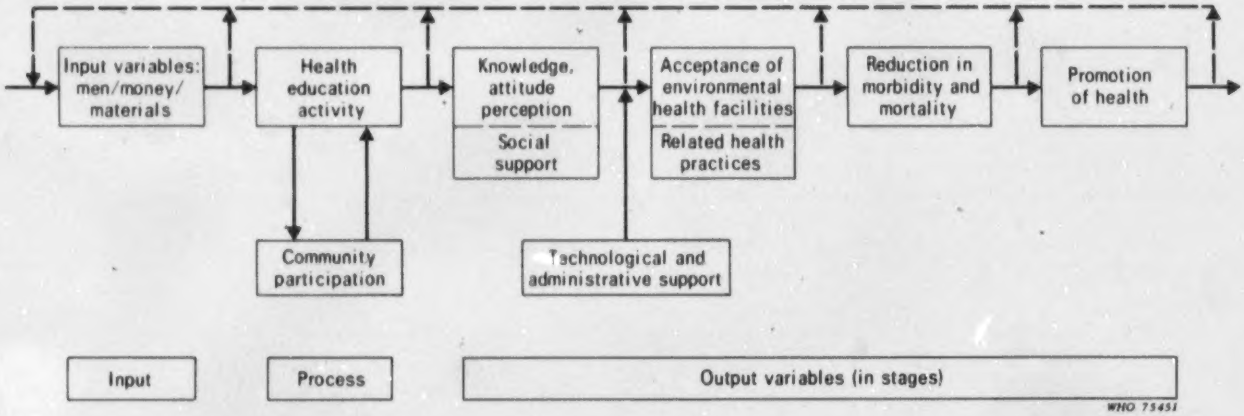
[4] WHO Technical Report Series, No. 528, 1973 (Report of a WHO Scientific Group on Evaluation of Environmental Health Programmes).

As a process, evaluation consists of a series of well defined steps such as: (1) establishing terms of reference; (2) determining objectives; (3) establishing criteria for success or failure; (4) collecting data according to predetermined procedures; (5) carrying out analysis and composition; and (6) drawing conclusions and reporting.

Evaluation aims at measuring both programme effectiveness and efficiency, the former indicating the extent of objective achievement and the latter dealing with the input/output ratio. It is a continuous activity carried out at different stages of the planning process, "at the beginning to ensure good planning; during the course of the activity to allow of any adjustments or alterations which may have become necessary; and at the end to assess the results, expected or otherwise, and to learn how future work can be improved".[1]

Since evaluation is a tool for improving programme performance, it has to be the function of all concerned with the programme. A sanitarian who makes home visits for educational purposes is as much concerned with his objectives as an administrator is concerned with total programme effectiveness. Health education evaluation must sometimes extend beyond termination of the programme because of the "sleeper" effect, under which changes in behaviour are manifest not immediately but after the programme ceases.

In view of the close relationship between the formulation of objectives and evaluation, the suggested conceptual model for evaluation is almost the same as that suggested for the formulation of objectives. The additional variables introduced in the model relate to technology and administration, since the viewpoint adopted in this guide is that ultimate behaviour changes are the result of the interaction of three different sets of interrelated variables belonging to education, technology, and administration. The model is shown in the accompanying diagram.


Input variables: men/money/ materials
Health education activity
Knowledge, attitude perception
Social support
Acceptance of environmental health facilities
Related health practices
Reduction in morbidity and mortality
Promotion of health
Community participation
Technological and administrative support
Input
Process
Output variables (in stages)
WHO 73451

The input variables in the model could otherwise be termed "structural". They relate to personnel, agencies, roles, training, coordination, supervision, equipment, materials, finance, etc. The health education activity variables could be termed "effort" or "process" variables. The end product of educational activities are the output variables, themselves arranged hierarchically.

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[1] Roberts, B. J. (1962) Concepts and methods of evaluation in health education. International journal of health education, 5, 52.

Indices for evaluation: input structure

In the section on the setting of educational objectives (page 14), the necessity of formulating objectives on input variables was stressed. Evaluation of input variables reveals how much of the planned input has gone into the programme and leads to investigation of the reasons for any gaps or delays, which enables correctives to be applied. Pertinent questions that may be asked are:

(1) Do all the agencies and personnel for whom roles have been defined participate in the programme?

(2) What is the proportion of the number of staff to the number sanctioned?

(3) What proportion of the staff has been trained in health education?

(4) Are the coordination committees formed? How do they function? Is coordination taking place to the extent desired?

(5) Are there delays in recruitment of staff?

(6) Is there great delay between a decision to initiate a change and its actual implementation?

(7) Have facilities for the training of personnel been created or not?

(8) Has provision been made for equipment and materials for health education? Are the procedures for procurement and distribution streamlined?

(9) What is the proportion of money expended to the amount budgeted? What are the reasons for non-utilization, if any?

Indices for evaluation: activities/process variables

For convenience, the entire process is described under four different headings - individual performance, quality of activities, community participation, and facilitating activities.

(1) Individual performance. This consists of the activities carried out by individuals compared with the expected ones. Examples are:

(a) the percentage of households contacted for educational purposes and frequency of contact.

(b) the number of group meetings conducted.

(c) the percentage of social groups identified and the percentage for whom information sessions were conducted.

(d) the data on mass media activities: i.e., the number of film shows conducted with the type of audience and participation; the number, frequency, and type of television and broadcasting programmes arranged; the number and coverage of articles published in newspapers and magazines; the quantity of posters and pamphlets expended and the categories of personnel to whom distributed; the utilization of indigenous cultural media in terms of types and frequency.

(e) the settings other than the community used for health education in terms of the types of settings used and the frequency of programmes (for details see the section on settings for educating target groups, page 26).

(f) the community leaders identified, trained, and utilized.

(g) the number of follow-up visits made.

(2) Quality of activities. Evaluation is concerned with the quality of interviews made by field personnel, e.g., the ways in which group meetings are organized and conducted and the way in which films are presented and exhibitions arranged. The quality of performance will not be reflected in monthly statistics. The criteria to be used for qualitative evaluation of a group discussion or interview are given in Annexes 4 and 5. The evaluation of a film show, for example, would concern itself with aspects such as the preview of films, the introduction of films to the audience, discussions on the film show immediately after screening (or at the earliest possible opportunity), and the involvement of the community in screening films.

(3) Community participation. Health education aims at utilizing the community as a medium for change. Examples of indices would be:

(a) the percentage of community leaders participating in the programme, of those identified and trained (which may be broken down into those participating frequently and those participating occasionally).

(b) the role played by community leaders in survey and planning and in the implementation phase (criteria may be again the number who participate regularly or occasionally and type of participation).

(c) the extent of community participation in education programmes such as arranging and conducting group meetings, mass media activities, family contacts, etc.

(d) the extent of community participation in collecting financial and labour contributions.

(e) the extent of community participation in the construction programme and the maintenance of completed works.

(4) Facilitating activities. This includes evaluation of activities such as staff meetings, coordination committee meetings, training sessions, supervision, and teamwork. These activities are essentially educational in nature, though concerned mostly with staff. A staff meeting could be so conducted that nothing but a review of the performance of individuals is carried out and faults highlighted. On the other hand, while reviewing performances of individuals, the opportunity may be taken for planning activities and the process so managed that the team is built into an effective working group. Criteria for evaluation are given in Annex 5. Similarly, criteria for evaluating supervisory functions can be found in the section on functions in supervision, page 48.

Indices for evaluation: outcome

One should look back at the objectives before deciding what to evaluate. If the objectives have been laid down clearly, evaluation becomes easy. The first-level measurements would be:

(1) Knowledge, attitude and perception variables. These would relate to environmental health problems, technological solutions and linkages. Perceptual variables will relate to the agency that delivers the services and to the delivery of services. Collection of information on these is not possible through service statistics. The fixing of criteria has to be done carefully; for example, in measuring knowledge, do we mean superficial or in-depth knowledge?

(2) Social support variables. Of interest to an administrator is the individual's perception of the extent to which his employer, peer group, family, religious head, occupational group, and leaders in the community approve of a practice. He also wishes to know whether a social norm is being built up in the community in favour of environmental practices.

(3) Acceptance and use of environmental health facilities. Evaluation would depend on expected behaviour. When the education is for the building of latrines, the criterion for

evaluation is the number of latrines built. But the overt behaviour usually has to extend beyond construction to use, which alone leads to the second-level objective. The difficulty here, however, is to obtain satisfactory criteria for measurement. The use of latrines, a dishwashing facility, or a mask provided for industrial workers involves repetitive behaviour often inaccessible to observation. Criteria for use of latrines have to be carefully defined. Experience shows that the latrines may initially be used by women and the sick and later the habit spreads to all members of the family. Initial criteria for the success of latrine promotion programmes may be their use, irrespective of who uses them. Use and maintenance, however, should be included in the criteria for success.

(4) Morbidity and mortality. There are accepted procedures for measuring morbidity and mortality and the results require careful interpretation owing to the effects of intervening variables. Provision should exist on a national basis for continuous monitoring of the morbidity and mortality data (from water- and excreta-borne diseases) from project areas selected on a random basis.

Use of service statistics for evaluation

The service statistics generated during the programme are used for the calculation of certain indices for evaluation. One must ensure, however, that the figures collected will facilitate their computation into the required indices, and this can be achieved through proper design of the recording system. Another aspect of service statistics is their reliability, and arrangements should be made for spot verification on a sample basis. A third factor is to avoid overburdening of field workers with too much bookkeeping under the name of evaluation as this would reduce their time for field work.

Certain types of information for evaluation are more amenable to being incorporated into service statistics than others. Information under "inputs", individual performances and community participation under "process", and facilities built and used under "output", could be incorporated into service statistics. The periodicity of collection with respect to each will vary. For example, the data under inputs need be collected only once in six months while the others may have to be gathered at monthly intervals.

Use of supervision or checklists for evaluation

The variables under quality of activities and facilitating activities could be observed during supervision. Another method would be to prepare checklists for their evaluation and either the workers or some designated observer from among the workers, trained for the purpose, could fill them in and present them for discussion.

Supervisors could detect changes in knowledge and attitudes of the community during their routine field visits. Informal discussions with people and attendance at group meetings would provide an indication of the changes in this regard. Periodic surveys by community leaders using simple questionnaires is another possibility.

Evaluation surveys

The evaluation system should provide for periodic surveys. Objective figures on changes in knowledge, attitude, perception, use of facilities, consumer satisfaction, etc. could be gathered only by scientifically conducted surveys. Such surveys being time consuming and costly should be designed with the help of professional disciplines in social sciences and statistics. While surveys need not form part of every action programme, there should be provision for them, at least in a sample of the programmes.

Establishment of a baseline

An essential aspect of evaluation is the establishment of a baseline against which to measure progress. Such baseline information would, in addition, facilitate planning. Different procedures were at times used in appraising programmes, in the absence of solid baseline data. As described by the WHO Expert Committee on Health Education of the Public:

> One procedure is to describe the health knowledge, attitudes, or behaviour after the programme is in operation, with the implication that the programme has produced change. Since the previous state is unknown, such conclusions may be grossly misleading.
>
> Another unsatisfactory procedure is to compare the progress of those in the programme with a different group that has not been exposed to the same programme. Such comparisons assume similarity of the two groups at the beginning, and fail to take into account the many forces outside the programme that may influence the results. Furthermore, comparison with other groups does not yield the most productive data for programme improvement, for its main focus is on the differences between the groups, and not on the educational accomplishment of the programme.[1]

These deficiencies could be taken care of by establishing a firm baseline and periodic surveys thereafter to measure progress.

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[1] WHO Technical Report Series, No. 89, 1954, p. 16.

SECTION II

TRAINING AND SUPERVISION

1. TRAINING

NEED

"Every health worker who is in close contact with the people has a potential influence on knowledge, attitude and health practices of the people with whom he works."[1] Opportunities for such influence are unlimited for environmental health personnel in view of their close contact with the public in their day-to-day work. That almost every branch of environmental sanitation has its health education aspects adds further significance to these contacts. These contacts could, however, be made more productive educationally if the workers are conscious of this responsibility and are equipped with necessary knowledge and skills. Since environmental health programmes are to have their base on extensive community participation, it is essential for environmental health personnel to acquire a thorough understanding of the educational methods that will enable them to enlist public participation in planning and implementing their programmes.

OBJECTIVES OF TRAINING

In view of their close relationship, the training objectives for environmental health personnel in health education could be drawn from the health education objectives for environmental health described in Section I, Chapter 2. These objectives would apply to the training of those environmental health personnel who are to carry out educational responsibilities as part of their normal work, i.e., sanitary engineers, sanitarians, etc. Other categories are excluded. While framing objectives, consideration has been given to the objectives laid out for the training of health workers in general in health education by the Expert Committee on Training of Health Personnel in Health Education of the Public. The suggested general objectives are:

(1) to create an awareness and understanding of the role of health education in environmental health programmes.

(2) to develop an interest in and a favourable attitude towards health education.

(3) to develop the ability to recognize opportunities to incorporate effective health education into everyday work.

(4) to develop the ability to plan, implement, and evaluate health education as an integral part of the environmental health programme.

(5) to increase the ability to communicate with individuals, families, community groups, and the general public and to enlist their participation in environmental health programmes.

(6) to promote team work for health education, as found appropriate.

(7) to encourage recognition of the role of specialists in health education and of the advantage of drawing on their resources as and when necessary.

CATEGORIES INVOLVED

The multitude of agencies concerned with environmental health programmes within the same country and between countries make it difficult to categorize personnel. While the primary category consists of those engaged directly in environmental health work, the value of including those who could assist in the programme because of their close contact with the community has been highlighted. Personnel may be categorized as shown below.

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[1] WHO Technical Report Series, No. 156, 1958 (Report of a WHO Expert Committee on Training of Health Personnel in Health Education of the Public).

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(1) Those involved directly in environmental health work and who could again be subcategorized into (a) those who by virtue of their training and occupation are concerned mainly with environmental work, and (b) those who take responsibility for environmental health work among other functions.

Subcategory (a) consists of engineers, sanitarians/health inspectors/sanitary engineering aides, etc., and subcategory (b) consists mainly of medical officers of health, industrial hygiene personnel, etc. In many countries the medical officer of health occupies the key position in environmental health work and has the statutory responsibility for its implementation.

(2) Members of health teams engaged in delivering personal health services, e.g., nurse-midwives, nurses, health visitors, public health nurses, and basic health workers.

(3) Staff of other development agencies and educational institutions, e.g., home economists, agricultural extension workers, non-medical social workers, community development workers, and schoolteachers.

FACTORS TO BE CONSIDERED IN PLANNING

An essential prerequisite for incorporating the health education component in environmental health training is the recognition by programme planners of the need for creation of educational skill among their personnel. As observed by the WHO Expert Committee on Training of Health Personnel in Health Education of the Public: "Before introducing or revising any curriculum to prepare future or in-service personnel to act as educators, the need for this skill must be recognized by those responsible for the production and improvement of the health of the community".[1] Two of the steps outlined in this guide will stimulate action. One of them is the inclusion of a health education specialist in the planning team, since the interaction that would develop between him and other team members would by itself be an educational process that would create a favourable climate for action. The other is the inclusion of the subject of training in the orientation sessions for planners. Similar sessions should be conducted for extended categories of top personnel who have responsibility for training. The assistance of health education bureaux could be sought for the purpose.

Forecasting the demand for future services, determination of priorities, and manpower development are normal functions carried out by environmental health agencies. Such planning exercises should pay attention to health education manpower requirements in terms of (1) additional manpower and (2) training needs.

Defining job responsibilities in health education for environmental health personnel needs considerable attention. It is helpful to pool the experiences of administrators, programme personnel, those engaged on research projects within the country or outside, trainers in health education, and operating personnel. Such job functions are to be considered tentative and subject to revision in the light of experience.

In planning for training, attention is needed at two levels. The first is the in-service training of those personnel who are in position or likely to be posted. The second is the incorporation of health education curricula in the basic preparation of personnel. It is felt that the training of those in position should receive immediate priority, and necessary action to incorporate health education into basic training should be initiated soon afterwards. The second process is time consuming, and an operating programme should not suffer for want of trained personnel.

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[1] WHO Technical Report Series, No. 156, 1958.

The training programme has generally to be planned in stages, allowing for overlap between stages. The first stage is the orientation of those responsible for training development. Some key trainers should be involved at this stage, since their participation would not only help to improve planning but would be useful in making changes in the training curriculum. The second stage is the preparation of trainers. The third stage is the initiation of training courses. The initial programmes should be carefully evaluated and the results fed into the plan before large-scale expansion takes place. The fourth stage is evaluation, which should extend to trainee performance in the field.

Planning should be based on facts. A baseline survey is indicated to gather information on (1) categories of personnel who could be used and their availability; (2) their basic preparation, content of health education if taught, methods of teaching, number of hours of teaching, nature of teaching faculty, etc.; (3) existing in-service or preservice training programmes, if any, for any of the categories either in health education or any other branch of health, the places for such training, content of training, training facilities and other details. Information on item (3) might open the way to utilize existing facilities for in-service training with whatever modifications may be needed, which may be preferable to the creation of new facilities.

Planning for training should be correlated with programme development. Experiences are not infrequent where trained personnel are not utilized for considerable periods of time for want of expansion of programmes. Conversely, reports where personnel are recruited and assigned to programmes without any preparation in health education are also not wanting.

The length or period of training of each category of worker would ideally be estimated by the time necessary for the worker to learn his tasks and become proficient. However, the need for a rapid initiation of programmes often imposes an arbitrary time limit on training courses. In such cases the initial training should be limited to learning the priority activities in health education, leaving the other functions to be learned during in-service training or continuation education courses.

DEVELOPMENT OF CURRICULA FOR HEALTH EDUCATION TRAINING

The objective of investment for health education training in environmental health is to improve programme performance. The training has therefore to be job-oriented rather than subject-oriented. It follows that the goals of training must be derived from the health education objectives of the environmental health programme and must have their base in the job descriptions, that is, descriptions of what is expected in health education from each category of worker. The function thus becomes the basis for framing the curriculum. The process of developing a curriculum consists of a series of steps, and while the exact number of steps depends upon the orientation of the trainer the essential phases through which the process has to pass are given in the following paragraphs.

(1) Defining functions. The first concentration is on defining the functions of the trainees as clearly as possible. Sometimes the functions given in the job description are too general to be useful for planning. The trainer has therefore to work with the programme administrator to obtain as clear and detailed a job description as possible. As stated earlier, experiences of previous research or action projects or of those who have worked on similar programmes will help.

(2) Enumeration of tasks. Once the functions are defined the next step is to enumerate the tasks to be carried out. The tasks are a set of related actions, the performance of which would make up the job or the function. To cite an example, a job of carrying out a village survey includes such tasks as preparing a map, administering household and community schedules, identifying the power structure, interviewing, etc. Once the tasks are defined for each job the trainer will find that there are certain common tasks. Some tasks may be more important than others, and some performed somewhat infrequently may be more crucial than others performed several times. Therefore it is necessary to evaluate each task in terms of

its relative importance to overall functions and the trainer has to use judgement in doing this.

(3) Spelling out areas of knowledge and skill. The enumeration of tasks should be followed by elaborating on the knowledge and skills necessary to carry out each task. When the same knowledge and skill are required to carry out several different tasks, they will be given proportionately more emphasis in the curriculum. Knowledge and skills are then grouped by content similarity. For example, all knowledge and skills related to leadership and working with leaders might be assigned under the heading "community organization" and then arranged under convenient session.

(4) Arranging the sequence of training sessions. The arrangement of sessions in proper sequence is the next logical step. In situations where the training consists of field experiences following the general steps in programme planning of community diagnosis, planning, implementation, and evaluation, the sequence of lessons may follow the same order. Areas of knowledge and skill related to community diagnosis (which have to be taught before the trainee carries out surveys) rank high in planning the sequence of lessons. Such arrangement of sequence will be of value only if theory and field experiences are linked. Where the field training is organized in one stretch at the end of theoretical classes, arrangement in this order is of no great value. For categories of personnel whose functions do not correspond to a sequential chain, the sequence considered most convenient and appropriate should be adopted.

(5) The other steps will involve estimating the length of instructional time necessary for trainees to acquire knowledge and skills and preparing lesson plans for each session. A lesson plan would include the objectives in measurable terms to be reached by the trainee, content areas to be covered, teaching methods and aids, and evaluation plans.

MODIFYING THE CURRICULUM TO TRAINEE NEEDS

Most trainees will have had some experience and background by the time they are sent for training. Their early involvement in the discussion and modification of the curriculum would help them to see the forthcoming experiences as meeting their needs. Experience has shown that only minor changes are usually made, but the process stimulates learning and increases the trainees' interest.

LEARNER CONSIDERATION IN TEACHING

An important consideration in organizing training programmes is to orient the training towards the learner rather than towards the teacher. Learning is a process that includes feeling, thinking, and doing (i.e., attitude, knowledge, and practice). It is influenced by many factors - experience, values, attitudes and habits, capacity to learn, readiness, motivation, etc. Teachers themselves must try to be aware of their students' difficulties, even when they are not directly expressed. The following points, as summarized by Dr Betty Mathews,[1] will enable a teacher to provide for situations in which learning will be most effective.

Learning for what? Learning takes place only when the learning goals have relevance and meaning for the trainee in terms of his own goals or needs and in terms of what he already knows. The trainer needs to make known to the learner the purposes of a learning session and how it will be useful to him or to engage the learners in analysing the learning purpose to determine for themselves its present or future usefulness to them.

Hey, you're over my head! Learning is not something that can be poured into people, but emerges from within them. Each person must impose his own order and meaning on events in his environment. He does this by organizing the new stimuli with his past experiences, present knowledge and the particular mental set that he brings to the situation. Learning experiences need to actively engage the learner in meaning-making and provide the trainer with continuous indicators as to the student's understanding.

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[1] Unpublished WHO document.

How am I doing? Experiencing needs to be followed by immediate feedback through reflection, discussion, assessment and the analysis of the consequences of one's behaviour. The trainer needs to provide criteria by which students can assess their performance. Also he must plan alternate periods of stimulation and reflection as well as directly give them his own feedback and feedforward.

But I'm different! Each individual is unique and especially where learning is concerned. There are individual differences in interests, needs, aptitudes, how much guidance or freedom a person needs, and in the amount of practice he requires. Also there are differences among trainees in the degree to which they can solve problems, use their imagination and creativity. In making decisions about learning experiences, the trainer needs to have a number of alternatives available in order to cope with the variations in the way people learn.

If I know it, can I do it? No skill is ever acquired without practice. To learn a new job skill is to do it, to err, to reflect and do it again until one feels a sense of personal mastery. The trainer's task is to select opportunities for practising the performance objectives under conditions as close to the actual job situation as possible.

TEACHING METHODS

Trainers have access to a variety of teaching methods to choose from. The method chosen would depend upon the kind of learning behaviour expected from the participants. The teaching methods that have proved effective are those that take into account the interest of the learner and that offer him an opportunity for participating actively in the learning process. The methods adopted in the training situation will also condition the attitude of the trainee to what methods he would adopt while on the job. Great care should therefore be taken to use methods most appropriate to the situation. The teaching methods used should be evaluated frequently.

Lecture

This is used most extensively in spite of its comparative ineffectiveness. It is passive and the instructor is usually the most active. Retention of information given in a lecture depends on the memory, which can be very unreliable. Lectures, however, have a role in teaching, especially when the purpose is to give information. To get the maximum result out of lectures, the talk should be limited to not more than 30-40 minutes. There should be an introduction on what the subject is about and a summary at the end dealing with the main points covered. A few minutes at the end should be devoted to a discussion on the main points covered. When outside lecturers are invited for classes, they should be briefed on the objectives proposed to be achieved and the background of students. Wherever possible, lectures should be supplemented by visual aids.

Group discussions

The comparative effectiveness of group discussions over the lecture method has been amply demonstrated. It helps in developing skills in decision making under a variety of situations. The group process cannot be left to chance and requires skilled leadership to guide the trainees through the discussions and to understand the group process.

Role playing

Here the students assume roles - i.e., how they would act if they stood in the shoes of other people. It is particularly useful when dealing with problems in human relations. Role playing is helpful in changing attitudes and ideas. It helps the learner to experience

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what something feels like and to test the consequences of behaviour. The players can be more forthright in their statements as they know that it is not they who are being criticized. The role play, to be effective, should be spontaneous and should be followed by a discussion of the reactions and feelings by the players towards each other, to allow them to analyse the situation and to draw conclusions from it.

Simulation exercises

The learners are confronted with a learning situation that is close to real life, in the form of an exercise or game. The field is simulated in the training session itself. Simulation methods can cover situations ranging from the simple to the complex. In elaborate cases, a whole field organization is created in a class situation and the participants are rotated through key roles in it and made to deal with specific situations, as they would experience them in real life. Role play itself is one of the simulation exercises.

Case study

A case study is a problem that the trainer knows to exist in a real life situation, and this is written in advance. The case must be relevant to the group if maximum learning is to take place. Participants put life into the case during discussions by "seeing themselves" in one or another person in the data or several in turn. A case method helps the participants to take into account all factors in the situation, analyse them carefully, and put them into an integrated whole for understanding and action. The method also promotes the exploration of the student's own attitudes and relationships.

Seminars, symposia, and other discussion methods

Participants have the opportunity to exchange ideas and recollection of experiences. Each one stimulates the other's thinking so that everyone's outlook is broadened. Participants develop tolerance of other's views. These methods will be most fruitful if participants can be drawn from different disciplines but dealing with the same subject or function.

Field work

Practical experience in the field is an essential and important part of any health education training, whether it is during professional preparation of health personnel or programme related in-service training. The community is an important laboratory for health education and provides the best opportunity for learning by doing. Field training in which students are given opportunities to study health problems, carry out an educational diagnosis, and develop, implement and evaluate programmes with community participation as a focus is often an invaluable part of training. The field training activities can be tailored to meet the needs of different categories of personnel.

Such field training could be greatly facilitated by the development of field practice demonstration areas. Health education bureaux concerned with the in-service training of health personnel invest effort and time in developing field practice areas. Such areas could be used both for demonstration visits by trainees and for practical field work. Environmental health planners might inquire about the availability of field practice demonstration areas before they select institutions for health education training in environmental health. They could also help to build such field practice demonstration areas as an integral part of the training centres concerned with training of sanitarians and sanitary engineers. The concept of development of such field practice areas attached to medical colleges are an innovative feature in undergraduate medical education and with institutes concerned with postgraduate training in health.

Guidelines for the development of field demonstration areas are available. Of particular importance is the one described in the report of the WHO Study Group on Education and Training for Family Planning in Health Services.[1] The relevant extract is given in Annex 8.

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[1] WHO Technical Report Series, No. 508, 1972.

TEAM WORK DURING TRAINING

Environmental health activity is, in many cases, the result of work by teams consisting of engineers, sanitarians, physicians, and other health personnel. It will be very useful if at some stage during the training programmes the environmental health personnel are exposed to team planning and team work. This would enable them to appreciate the contribution others can make and to utilize these contributions. The use of the field practice demonstration area will facilitate such team work. Even if it is not possible to bring every member of the team together, efforts should be made to bring together those with whom the trainees are most likely to be in close contact during their work.

SPECIAL CONSIDERATIONS IN INCORPORATING HEALTH EDUCATION INTO THE BASIC PREPARATION OF ENVIRONMENTAL HEALTH PERSONNEL

The incorporation of health education into the curriculum for environmental health personnel requires special attention because of the difficulties that might occur in the process.

The orientation of those concerned with curriculum revision is the first essential step (see page 39).

The difficulties in developing changes in curricula at university level and a systematic process by which such changes could be brought about have been dealt with by the WHO Study Group on Education and Training for Family Planning in Health Services.[1] Such a process for curriculum revision might be outlined as follows:

(1) the creation of an understanding of the need for curriculum change. This could be effected by the circulation and discussion of a position paper written by a faculty of high reputation.

(2) the establishment of some agency (the curriculum committee itself can be the change agent) that can bring about the contemplated change. The task of this group would be to monitor the effects of the curriculum changes in a pilot study and report back.

(3) the involvement of the institution as a whole in clarifying the problems that exist with the current curriculum and in making a trial run with the revised curriculum.

(4) the collection and summarizing of data concerning the efficacy of change, the holding of further discussions if necessary, and the adoption of the changed curriculum.

The introduction of health education into an existing curriculum as a new subject will necessitate the reorganization of the whole curriculum and will probably involve cuts in some parts of it.

The detailed curriculum for each category must be worked out separately. Subjects to be covered would include: elements of behavioural sciences as applied to health education; health education - principles, methods and media; communication process; and the planning, implementation and evaluation of health education programmes for environmental health.

Attention must be given to the choice of faculty for health education teaching. Where the training institution is part of a complex where facilities for health education teaching exist, there will be no difficulty in getting qualified staff. In other cases, the usual tendency will be to depend on visiting faculty. While this might be acceptable as a stop-gap arrangement, it can never be a substitute for a trained person being available on the faculty. An institution can never arrange a field oriented programme depending on visiting faculty. A more satisfactory arrangement would be to give specialized training to one of the existing faculty members to enable him to handle health education classes.

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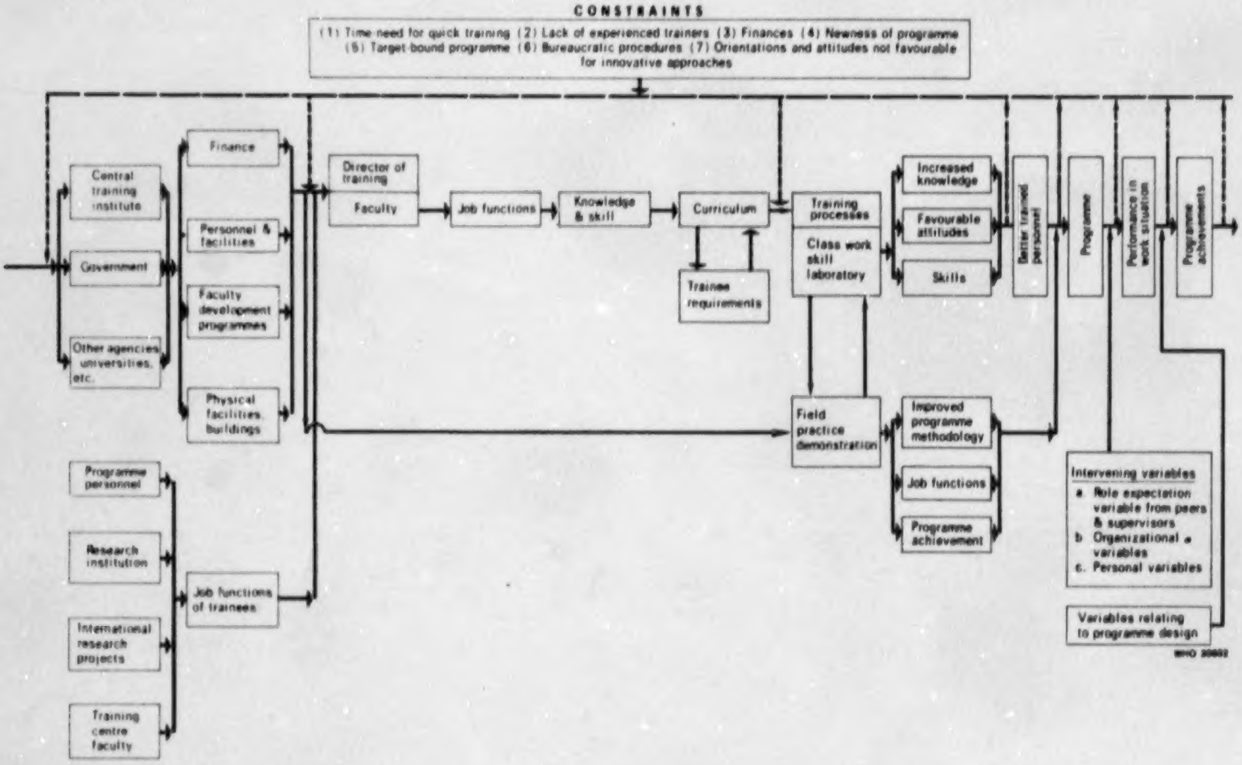
[1] WHO Technical Report Series, No. 508, 1972.

SPECIAL CONSIDERATIONS IN RELATION TO THE ORGANIZATION OF IN-SERVICE TRAINING

Whenever existing health training institutions are utilized for health education, they must have adequate teaching faculties, facilities for field training, and physical facilities such as classrooms, residential accommodation for trainees, a library, and an audiovisual section. In other cases, new in-service training centres have to be created.

In-service training has to be conceptualized and operationalized on a systems basis. Training itself should be considered as consisting of three phases - pretraining, training and post-training. The pretraining phase involves a close contact between the training centre faculty and programme administrators so that the training fits into programme needs. It also involves contacting trainees in advance of their coming to the centre to know their problems, needs and expectations. The post-training phase consists in following up of the trainees to study the effectiveness of training and orienting the administrators on what is taught. The conceptualization based on this and other factors described in earlier paragraphs is shown in the accompanying diagram.


CONSTRAINTS
(1) Time need for quick training (2) Lack of experienced trainers (3) Finances (4) Newness of programme (5) Target bound programme (6) Bureaucratic procedures (7) Orientations and attitudes not favourable for innovative approaches
Central training institute
Government
Other agencies universities, etc.
Finance
Personnel & facilities
Faculty development programmes
Physical facilities, buildings
Programme personnel
Research institution
International research projects
Training centre faculty
Job functions of trainees
Director of training
Faculty
Job functions
Knowledge & skill
Curriculum
Trainee requirements
Training processes
Class work skill laboratory
Field practice demonstration
Increased knowledge
Favourable attitudes
Skills
Improved programme methodology
Job functions
Programme achievement
Better trained personnel
Programme
Performance in work situation
Programme achievements
Intervening variables
a. Role expectation variable from peers & supervisors
b. Organizational variables
c. Personal variables
Variables relating to programme design
WHO 30602

EVALUATION OF TRAINING PROGRAMMES

All training programmes need to be evaluated on a continuous basis. The purpose of training is to bring about a planned change in the knowledge, attitude, and skill of students over a period of time. What is measured is the changes brought about, and the period would imply the time allotted for bringing about the planned change, which might be the whole period of training or a part of it. Planned change would imply the experiences planned by faculty or jointly by faculty and students to bring about the change.

The evaluation of training calls for the establishment of objectives in terms of the desired behaviour expected of students at the end of the training. The second step is the establishment of criteria to measure the attainment of these objectives. The third step is the implementation of a plan of evaluation.

The first stage of evaluation of the trainee is at the point of entry. This not only establishes a baseline but also provides the trainer with information on how much knowledge the trainee possesses already. The individual variations observed in the entry evaluation will enable the trainer to pay the right amount of attention to each trainee, depending on his needs. While a repeat measure of the behaviour at the point of exit indicates how much the trainees have progressed during the training, it is advisable to have interim evaluation also. For example, each session or group of sessions is meant to achieve certain behavioural objectives. These might be regarded as sub-objectives. Periodical evaluation would show how effective the learning experiences provided have been. From the trainer's point of view this information is more important than the measurement at point of exit, since the periodical evaluations might indicate a need to reorganize the planned teaching-learning experiences.

In addition to evaluation at point of exit, a continuation of the evaluation of trainee performance on the job, a few months after training, is worthwhile. Two highly valuable pieces of information can be collected at this point:

> The first has to do with assessing how well the learners have achieved the performance objectives of the teaching programme. It answers the question, "Did the trainers succeed in teaching what they intended to teach?" The second kind of evaluation has to do with whether the decisions about what to teach were adequate as judged by the graduate's ability to perform his job function. This evaluation, carried out after the graduate has become settled into his job for several months, requires him to indicate those aspects of his training programme that he considers beneficial to his present effectiveness and those he considers useless or detrimental.[1]

The evaluation of the trainee on the job would necessitate looking into variables in the work climate that facilitate or impede his performance. Since we know from research that support from supervisors and peers is needed to enable an individual to perform in ways that differ from those to which he was accustomed before training, an assessment of these variables would tell us whether the attention needed is in training or in influencing the work climate.

The evaluation of trainee performance on the job would also indicate any need for a review of the programme premises. The trainee might be performing well but the results in terms of programme achievement might be poor. At this stage the programme planner has to reconsider the situation and test, through further research, whether the job functions are really those that are capable of producing the required consumer response. Or he may find some unsuspected variable intervening.

TRAINER PREPARATION

Attention to preparation of trainers is part of the training plan. Special programmes can be arranged with the help of health education bureaux or university departments, where such capability exists. Special courses supplemented by travelling seminars to places where successful programme activities are in progress, use of short-term consultancy services, periodic workshops, and study tours abroad are other methods by which the trainers can be trained. Care should be taken to expose trainers to successful field experiences in health education for environmental health or for other health programmes during their training period.

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[1] WHO Technical Report Series, No. 508, 1972 (Education and training for family planning in health services: report of a WHO Study Group).

AUDIOVISUAL EQUIPMENT AND LIBRARY BOOKS

At the planning stage, provision should be made to equip training centres with necessary audiovisual equipment and aids and library facilities. The health education bureaux can provide lists of equipment and books, and the environmental health budget may provide for their procurement and supply.

2. SUPERVISION

The success of health education activities depends to a great extent on the quality of supervision provided. Supervision means different things to different people. It is essentially an educational process in which the supervisor takes responsibility for helping the supervisee develop himself and become more competent in discharging his duties. Supervisory needs should thus become gradually less with the passage of time.

Supervision in health education should be perceived as continuing education. It should reinforce the initial training of the worker and help him to meet new challenges that he might come across in the field.

OBJECTIVES OF SUPERVISION

Organizations are designed primarily to achieve a set of predetermined objectives. Their achievement is, however, subject to their being accepted as part of the personal goals of the workers, and an objective of supervision is to facilitate this. Health educational goals are part of environmental health programmes, and the supervisor should explain the goals, and tell the worker why they are set and how everyone can contribute to their achievement. The supervisee should be involved in the formulation of these goals and their readjustment, to which he can contribute his own experience.

A second objective in supervision is to find out whether the policies and methods followed in the organization will aid in the achievement of the educational objectives set. If involvement of the community in educational activities is an accepted policy, the day-to-day work of the personnel should reflect this. Policies and methods once set may not be valid for all time. As more is learnt about community problems and programmes it may be seen that certain changes in policies and methods are necessary, and supervision should facilitate such changes.

A third very important objective of supervision should be the development of the workers, whether as individuals or as a group. Educational skills cannot be learnt overnight and are reinforced by practice. The learning needs of the workers, as revealed from their performance, and the provision of situations for furthering learning should be paramount in supervisors' minds.

Environmental health activities require team work. The supervisor should therefore facilitate role clarification, coordination, the free flow of communication, and agreement on objectives among team members, which are essential for the success of team work.

Good morale among workers might motivate them to make maximum efforts and increase productivity. While it is difficult to define morale, it is governed by such factors as the satisfaction of workers with organizational methods and policies, their working group, their working environment, and the quality of supervision. One of the aims of supervision is to promote morale among workers.

A last, but most difficult, objective of supervision is to bridge the gap between the individual goal and the organizational goal. Organizations are concerned with maximizing outputs with minimum inputs, but workers are guided by the individual goal of maximizing their profits. The health education methods described in earlier chapters, particularly those concerned with the participation of the community in decision making, are equally helpful as good supervisory practices.

FUNCTIONS IN SUPERVISION

A supervisor assumes many roles and responsibilities in the course of his work. He is often called an educator, an evaluator, a resource person, a group member, an observer, a learner, and an administrator. The major supervisory functions in health education are:

(1) Orientation of newly posted staff. Transfers and postings of personnel are common in all organizations. All newcomers should be informed about their functions in health education, the methods that they should use, and the personnel with whom they will work.

(2) Assessment of the workloads of individuals and groups. Two things are important in this respect - that the workload is both physically and mentally within the competence of the workers concerned, and that duties beyond their competence should not be assigned to them. Supervisors cannot expect from workers functions that they cannot perform themselves.

(3) Arranging for the flow of materials, etc. A supervisor must find out the needs for educational materials and arrange for their supply in good time.

(4) Creation of the necessary climate for work within the community, by such means as influencing community leaders to accept the programme, orienting other development agencies to participate, and encouraging social groups to render support.

(5) Coordination of the efforts of all workers and agencies and the promotion of team work. How such coordination could be achieved has been described earlier.

(6) Promotion of the effectiveness of workers. This may be done through: (a) the evaluation of their work performance, (b) the identification of causes of difficulty, (c) the provision of continuous training and guidance on the job, and (d) the helping of individuals to develop and implement a plan for their growth in the field of education. The worker himself should be involved in preparing the details as a way of assuring his commitment to action.

(7) Promotion of social contacts within the work team. Social contacts help to weld the staff together and increase cohesiveness among the group.

(8) Helping of individuals to cope with their personal problems. Problems that are not strictly official are likely to come up while dealing with individuals, and although they may be outside the supervisor's duties, a sympathetic hearing and understanding improves the individual's morale.

(9) Facilitation of flow of communication. A free flow of communication among members is necessary for team work. Supervisors should encourage free communication among peers, between workers and community representatives, and among members of a work group. Dependency on hierarchical channels alone is not sufficient.

(10) Raising of the level of motivation. All good work should be given due credit through appreciation and recognition. Supervisors must provide opportunities for growth and expansion of individual personality, competence, achievement, etc. Workers should be treated as human beings rather than cogs in the wheel.

(11) Establishment of controls. The supervisor must know what work is being done, how it is being done, and with what effectiveness. A number of methods such as observation and record reviews are available for the purpose.

(12) Development of confidence. Supervisors must know the background of workers and try to develop mutual confidence. Mere fault-finding will only undermine the worker's confidence in the supervisor. There is need to combine understanding with firmness and take a personal interest without sacrificing impartiality or discipline.

(13) Emphasizing of achievement. It has been proved that the development of smoother work routines and the improvement of human relations without corresponding emphasis on goal achievement are not likely to increase productivity. Supervision should therefore aim at reminding workers to achieve the goals expected of them.

(14) Record keeping. The supervisor should develop a system of records and returns of educational activities and should review their usefulness periodically.

SUPERVISORY METHODS

Individual conferences

Conferences between supervisor and supervisee should be planned at periodic intervals, the frequency depending on the worker and his need for guidance. These planned conferences should make effective use of records of performances of the worker concerned.

A major feature in such individual conferences is free communication. While downward communications are easy, efforts should be made to make them clear and specific. Upward communication is difficult because subordinates usually withhold information, not knowing how the supervisor will react. Extra efforts are needed to facilitate upward flow. The supervisor should try to put his subordinate at ease by creating a favourable atmosphere and should encourage two-way communication.

The content of individual conferences may vary widely, from the relationship of the worker to his group, say, to programme planning or the development of a plan for the workers' growth.

There are four steps in the supervisory process.[1] (a) The supervisor must diagnose the needs of the group and its members in relation to the group's own purposes and the goals of the agency. (b) He must determine what the worker needs to learn, arriving at this by analysing the job to be done and the worker's abilities and limitations. (c) He must determine the content to be taught in relation to the way the worker learns and what he needs to learn. (d) He must use the enabling process to help the worker learn the content he needs to know in order to do the job more effectively.

Staff meetings

Staff meetings provide an excellent opportunity for supervision. The preparation of the agenda for the meeting in consultation with those attending helps to bring up subjects that workers consider most important to them. The usual practice is to utilize staff meetings to make announcements, transmit information, and review routine business. But staff meetings are also extremely useful for programme review, the identification of problems, and planning. As stated earlier, attention not only to tasks but to the process functions in a group provides an opportunity for developing the competence of workers in group work. Staff meetings, planned carefully, can become excellent continuing training sessions. They provide a good setting for using group methods in supervision.

Training sessions

Since an important aim of supervision is the development of workers, prearranged training sessions are valuable tools. Such training sessions provide opportunities for team planning and can be highly effective if they are problem centred.

Observation

The direct observation of workers, not only at staff meetings but in the community setting, provides opportunities to know the amount and quality of the services rendered and to judge the interaction between the workers and the community. It provides the worker with a sense of support, a feeling that the supervisor understands the situation. It also provides a basis of common experience for the discussion of performance as a whole. Such observations should extend to other work situations such as group meetings in the community, the use of audiovisual equipment, and school inspection.

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[1] European Seminar on the General Principles of Social Group Work, Sèvres, November 1959. Geneva, United Nations.

Evaluation

The evaluation of worker performance is an important supervisory tool. The performance of a worker should be compared not only with that of his peers but also against theoretical standards. The analysis of job performance is based both on direct observation of work and through indirect observation of records and reports and behaviour in group meetings. Data on work performance should be maintained over a fairly long period to note the steadiness or otherwise of the worker and the trends in his performance. Job performances should be considered not only against the objective of the programme but also against the worker's own capability. This is necessary because the supervisor is interested in improving not only the work but the worker too.

There may be many reasons why performance does not come up to the established criteria. The criteria may have been set too high for the competence of the worker or for the situation in which he functions. Events may not have been properly recorded or the worker adequately trained. The deficiency may be in motivation or in the general ability of workers or in services and supplies. The situation is best clarified at individual conferences.

SUPERVISORY STYLE

Authority and leadership are concepts that influence supervisory style. Authority is the right to command and is vested in the supervisor by the organization. Leadership is a process of influence. Psychologically speaking, the supervisee is left with no choice in decision making in an authoritarian style of supervision, while in the leadership style the ultimate choice in decision making is with the supervisee. While a supervisor may be vested with authority, its use in actual practice will be restricted because of the negative feelings and attitudes it may create and because of its ineffectiveness in generating initiative among supervisees. Supervisory style, in actual practice, will fall at some point in a continuum extending from authority at one end to leadership at the other end. The mix suited for particular situation will depend on a combination of three sets of factors -- (1) forces in the supervisor, (2) forces in the supervisees, and (3) forces in the situation. Forces within the supervisor that interact in the choice of pattern are his personality, the time available, the type of decision, his knowledge, and the expectations of his peers and supervisors. Those within the supervisee are his need for independence and his experience, skill, tolerance of ambiguity, and initiative. The situational factors cover the nature of the organization, cultural factors in society, value system, etc. Supervisory style is thus situational.

SECTION III

ENVIRONMENTAL HEALTH EDUCATION IN SCHOOLS

Attention to health is implied in the objectives of general education. Children need good health for effective learning, and the various learning opportunities in the educational career offer wide scope for teaching about health. The opportunities to influence health attitudes and behaviours during the early growing years, the need to control the stress and contagion arising from their frequent contacts outside the family environment, the opportunity to influence home through the school, and the easy approach to a vast segment of population through the school system are additional factors that favour special consideration to this group. Attention to health matters in their formative years will influence the future health behaviour of children and thus enable them to become more responsible parents and productive members of the society.

Health education is an important component of health programmes. It is concerned with the child's growth and development - physical, emotional, intellectual, and social. It is recognized that to have its maximum effect, health education should be blended not only with the general educational system but also with the provision of health services, which should include health promotion, health appraisal, and health restoration.

This section deals with those aspects connected with incorporating environmental health education into the school system. Three of the major areas on which environmental health planners could concentrate their attention are discussed. These relate to (1) environmental health instruction and its integration in the school curriculum, (2) the provision of environmental health facilities in schools, and (3) the preparation of teachers for the implementation of the programme in schools.

COMPONENTS OF ENVIRONMENTAL HEALTH INSTRUCTION IN SCHOOLS

Health education for environmental health is part of an overall health education programme. It is concerned with teaching of those aspects of man's physical, mental, and social well-being that depend on the environment. It embraces the health aspects of biological, physical, and chemical pollution of water, food, air, and soil. The subjects to be covered under health education for environmental health include: (1) water supply, (2) disposal of human excreta, (3) solid and liquid wastes disposal, (4) air pollution, (5) water pollution, (6) soil pollution, (7) food control, (8) vector control, (9) occupational hazards, (10) radiation hazards, (11) noise control, (12) housing, and (13) village and town planning.

SOME GENERAL PRINCIPLES IN PLANNING SCHOOL HEALTH EDUCATION FOR ENVIRONMENTAL HEALTH

The health knowledge, attitudes, and behaviour of schoolchildren will be influenced by many sources and activities. The main influences are:

(1) through their contact and personal experiences in the various medical, dental and other health services;

(2) through daily living experiences in the home, school and community environment;

(3) through integrated and direct teaching in health; and

(4) through various cooperative school, home and community activities, relationships and experiences.[1]

The planning for effective health education in schools must, therefore, provide for "learning experiences in health at school or under the control of school personnel, not only the formal classroom instruction in health and hygiene."[2]

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[1] This analysis of influences is from: Tiglao, T. (1972) Planning for health education in schools, International journal of health education, 15(3) Supplement.

[2] Turner, C. E. (1966) Planning for health education in schools. London, Longmans-UNESCO (UNESCO Source Books on Curricula and Methods, No. 2).

Health education for environmental health should be taught as part of an overall health education programme in view of its interrelationship with subjects like disease control, nutrition, personal hygiene, and family health and of the need to expose the students to an integrated picture. Its planning, therefore, has to be part of planning for school health education programmes.

The incorporation of environmental health teaching in school curricula will be governed by:

(1) the value and importance attributed to education for health within the educational system;

(2) the priority for environmental health in the midst of competing priorities for nutrition, small family size, disease control, and others. Such priority questions arise in the absence of an integrated programme.

Instruction in environmental health should be integrated with provision of opportunities to adopt sanitary practices. Learning by doing and learning through example are two effective methods by which children learn. Every effort should be made to enable children to absorb during their school life the need for and proper appreciation of sanitary practices, both by classroom teaching and day-to-day familiarity with good sanitary practices. Priority attention to school sanitation is a prerequisite for instruction in environmental health.

Health education takes place in the home, the school, and the community. Whatever is taught and practised at the school should be reinforced at home and supported by the community. A certain amount of coordination between health education programmes in school and in the community is therefore essential.

Cooperative working relationships between education and health authorities, including environmental health agencies, have to be fostered for successful planning.

While utilizing the school system, it must be remembered that in many countries there are large groups of school-age children and young people not attending school owing to the prevailing social conditions. Plans should be drawn up to meet the needs of this group.

The environmental health problems in each country may be different. The educational content should relate to the environmental health needs prevailing at the time. National outlines of curricula can be adapted to regional needs wherever necessary.

The preparation of schoolteachers to handle environmental health education through attention to their basic training and in-service training is essential to the success of educational efforts.

Since environmental health subjects will be taught year after year, a planned progression in teaching is necessary. The curriculum for each grade must be related to the changing needs and interests of children at different ages.

OBJECTIVES OF SCHOOL HEALTH AND HEALTH EDUCATION FOR ENVIRONMENTAL HEALTH

School health education, including environmental health instruction, is part of a total school service. It also cuts across other parts by utilizing the opportunities available in them for educational purposes. The objective of a total school health programme is to bring each child to his optimum level of health by:

- providing healthful school living
- protecting children against communicable and other preventive diseases
- discovering physical defects and other abnormalities in the child and promoting their correction if they are remediable

- developing the knowledge and attitudes that will enable the individual to make intelligent health decisions

- promoting desirable health habits

- developing school, home and community cooperation in health promotion.[1]

A further objective of health education in schools is not only to enable the individual student to maintain and improve his own health but to take his share of responsibilities to protect others. The specific objectives will, however, have three major components related to knowledge, attitude, and practices. The specific objectives of health education for environmental health are:

(1) To develop knowledge and understanding

(a) of those factors in man's physical environment that have a relationship to health.

(b) of the role of these environmental factors in causation or transmission of disease.

(c) of effective measures for protection to prevent disease and to promote health and efficiency.

(d) of the interrelationship between biological, physical, and social environments.

(e) of reliable sources of information for environmental health.

(f) of community health problems related to environmental health in the area.

(g) of health regulations in the community.

(2) Attitudes and appreciation[2]

(a) Desire to attain optimum health.

(b) Personal satisfaction in carrying out sound health practices.

(c) Acceptance of responsibility for his own health and for the protection of the health of others.

(d) Willingness to make personal sacrifices for the health of others.

(e) Willingness to comply with health regulations and to work for their improvement.

(3) Practices

(a) Practice of hygienic habits at school, at home, and in the community.

(b) Participation in school and community environmental health improvement programmes.

(c) Utilization of environmental health services available.

For the attainment of these objectives, the students should have adequate knowledge in relation to subjects like personal hygiene, anatomy and physiology, disease control, and promotion of health. That is one of the reasons why health education for environmental health should be taught as part of an integrated health education programme.

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[1] This list of ways of promoting health in schoolchildren is from: Turner, C. E. (1966) Planning for health education in schools. London, Longmans-UNESCO (UNESCO Source Books on Curricula and Methods, No. 2).

[2] Turner, C. E., Sellery, C. M. & Smith, S. L. (1966) School health and health education, 5th ed. St Louis, Mosby, p. 9.

PLANNING AND IMPLEMENTING HEALTH EDUCATION FOR ENVIRONMENTAL HEALTH

The responsibility for school health education in general might be with the health agency or the school agency or both. Irrespective of the location of the environmental health agency in the government system, its planners should assume leadership in incorporating instruction in environmental health into the school health education curricula and in providing schools with essential sanitation requirements.

Attention to the following organizational considerations is necessary for promotion of school health education. Environmental health personnel could provide leadership in promoting them.

Unit for planning school health education

There is a need for units for school health education at the national, state, or regional level, depending on the administrative structure of the country. This unit should be part of the health agency, whether located within a broader division of school health services or health education bureaux. The responsibility of this unit would be to plan, coordinate, and evaluate health education services for schools.

School health education councils or advisory bodies

Consideration should be given to the creation of advisory councils for health education at the highest level in the state, consisting of representatives from health (including environmental health), education, voluntary bodies concerned with school health, the community, and the universities. Those connected with political decision making in health or education may head these committees. The main functions of the advisory councils would be to suggest ways and means of incorporating health education in schools and provide the necessary value and prestige for school health education.

Interagency or departmental committee for health education

Agencies dealing with environmental health, fertility regulation, mental and emotional health problems (such as drug dependence and smoking), nutrition, and disease control are also interested in incorporating the health education aspects of their respective programmes into school curricula. A coordination committee consisting of representatives of these agencies or departments, together with those of education, may be formed to assist the health education unit to deal with the problems of planning and implementing health education.

Responsibility for health education within an education agency

In many countries there is no one in the department of education who is specifically concerned with health education in schools. It should be the endeavour to have one person at a high level in the school system with responsibility for health education.

Provision of healthful school environment

Mere instructional classes in environmental health will have limited value unless the school environment itself provides opportunities for indirect health learning. Environmental personnel have a responsibility to ensure at least two aspects of school health - a healthful environment (i.e., good sanitation) and safety. Most of the schools in the developing countries lack basic sanitation facilities, let alone adequate space and sufficient furniture. While educational agencies agree to provide them in principle, these amenities lose their priority in actual implementation because of competing demands on resources. Educational planners, faced with the problem of meeting the demand for additional schools with limited resources, often choose to provide some accommodation irrespective of the hygienic standards. The problem has no easy solution, but cooperative efforts could help. The environmental health agency could contribute to these efforts by:

(1) preparing appropriate standards for school sanitation. These standards relate to location of schools, lighting, ventilation, acoustics, water supply, food sanitation, excreta disposal, plumbing, and arthropod and rodent control. Different standards based on geographic location and socioeconomic conditions should be prepared. Such standards may deal not only with environment, but also with equipment. These should be discussed with the school authorities and agreement obtained to provide them.

(2) making provision, in environmental health plans, for essential sanitary services to schools. Whenever plans are drawn up for community water supply or excreta disposal, the extension of these services to the schools in the community may be made an integral part of the plan and budget. Whether this should apply to schools run by private agencies is for the local authorities to decide.

(3) improving the environment of schools to an acceptable minimum standard through a joint financial endeavour with health and education agencies.

Supply of educational materials

To facilitate health instruction, provision should be made for the preparation and supply of teaching materials. Films on environmental health to suit local culture, filmstrips, programmed instructions, and textbooks are among the materials needed.

CURRICULUM FOR HEALTH INSTRUCTION IN ENVIRONMENTAL HEALTH

The objectives of environmental health teaching have been outlined on page 54. The preparation of a detailed curriculum is the work of special committees consisting of experts in education and environmental health. Some special considerations are given below.

(1) The curriculum for each country should be based on its current environmental health problems.

(2) Generally, two different methods are adopted in the preparation of a curriculum. In the first method, detailed outlines covering the content to be taught for each grade are prepared at the national or state level, and teachers follow these outlines closely. In the second method, teachers are given the educational objectives for each subject of instruction and wide latitude in developing their own lesson plans and teaching methods. The adoption of the latter system presupposes that the teachers are well prepared for this type of function. While either system could be adopted depending upon local capabilities, it is advantageous to adopt the planned programme where the teachers lack orientation to health and proper motivation. Even in a planned programme, the involvement of teachers in curriculum preparation has many advantages. Their experience with the respective grades of students provides a good judgement of what can be undertaken and what methods should be used with respect to each level.

(3) The environmental health problems change with time. The curriculum must, therefore, be kept under periodic revision.

TEACHING METHODS

A variety of methods are available in health instruction. They are described in most of the standard textbooks.[1] Some of the methods found particularly useful in practical experience gained in actual environmental sanitation projects are those involving: (1) student participation in the maintenance of the school health environment (e.g., selection of water sources, proper storage of drinking-water and chlorination, garbage disposal, maintenance of latrines, and hygienic food handling practices during school lunch); (2) student participation for community health education through enactment of dramas, organization of exhibitions, etc.; (3) visits to sites where health facilities are being constructed; and (4) field work aimed at identifying the breeding places of insect vectors of disease and experimental work on breeding insects *in vitro* and controlling them.

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[1] An excellent summary is available in: Turner, C. E. (1966) *Planning for health education in schools*. London, Longmans-UNESCO (UNESCO Source Books on Curricula and Methods, No. 2).

In the Philippines, not only do students participate in the hygienic disposal of garbage but they do practical work on reusing it as a manure after proper decomposition.

Many secondary schools have access to additional facilities such as radios and cinema and slide projectors. These are of great value, but teachers should be innovative and choose particularly those methods that involve active student participation.

Use of inspection visits by environmental health personnel for teaching purposes

Inspection visits can be used for educational purposes. The attendance of teachers at inspection visits to check sanitary standards has been found to be useful. Still another method would be for the sanitarian or nurse to make informal sanitary inspections of the school with groups of students and demonstrate environmental factors.

TRAINING OF TEACHERS

The success of school health education activities depends on the quality and motivation of teachers. It is unrealistic to expect teachers to give training in habits to which they themselves are not accustomed. Priority attention must be given to training in environmental health during the basic preparation and in-service training of teachers for successful implementation of health education programmes.

Functions of teachers in health education for environmental health

The functions of schoolteachers embrace all aspects of the school health service. Specific functions with respect to environmental health are given in the succeeding sections.

(1) Healthy school living

(a) Identify the deficiencies in environmental health standards in the school and immediate surroundings.

(b) Seek and obtain help from concerned authorities, the community, or voluntary agencies to develop a sanitary environment in the school.

(c) Maintain the sanitary conditions in the school with regard to housekeeping, water supply, and the disposal of liquid and solid wastes.

(d) Maintain sanitary and hygienic conditions in the conduct of school lunches.

(2) School health services

(a) Understand the environmental health functions of the school health service.

(b) Cooperate effectively with personnel such as sanitarians, school nurses, public health engineers, and physicians in the environmental services they render to the school.

(c) Participate in the follow-up programme for correcting the environmental health deficiencies noticed.

(d) Work effectively with the school health council or such other committees formed to strengthen the school health services programme with regard to environmental health.

(3) Instruction in health

(a) Carry out environmental health instruction depending on the needs and interests of students of various grades.

(b) Develop and use a variety of learning experiences adapted to the development level of pupils. Such experiences may be developed particularly from:

(i) sickness in school, home, or the community, or defects noticed in health appraisal attributable to poor environmental conditions.

(ii) participation of students in the maintenance of sanitary conditions in schools and immediate surroundings.

(iii) participation in school lunch programmes.

(c) Select and use a variety of teaching materials, and prepare simple ones locally.

(d) Evaluate health instruction in terms of knowledge, attitudes, and behaviour.

(e) Develop suitable motivation for healthy living.

(f) Keep abreast of new developments in environmental health education.

(g) Furnish an example of healthy living for students to imitate.

(4) School, home, and community relationships

(a) Interpret school environmental health programme to families and communities.

(b) Develop school-community relationships through parent-teacher associations or other suitable committee mechanisms.

(c) Participate in health education and health improvement programmes in the community.

(d) Serve as a resource person to the community in matters of environmental health.

Objectives of teacher preparation

Objectives for teacher preparation in health education have been spelled out by a joint WHO/UNESCO expert committee appointed for the purpose.[1] Objectives of environmental health instruction form part of these general objectives. As laid down by the expert committee, the principal objectives of teacher preparation for health education are to develop:

(1) a standard of personal health practices that will help to maintain the health of individuals and serve as an example to pupils or students.

(2) understanding and skill in maintaining an optimal emotional environment through desirable interpersonal relationships.

(3) an appreciation of the value, importance and place of education in health as a part of the total education programme.

(4) a willingness to play an appropriate part in the promotion of health in the school and community.

(5) an adequate background of professional knowledge about child growth and development, personal and community health, and programmes and procedures in school health.

(6) understanding and appreciation of a healthy physical environment and how it is maintained.

(7) skill in promoting health education and in working cooperatively with others in the sphere.

(8) a knowledge of community health and social agencies and the ways in which the teacher may work properly and effectively with them and with the home.

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[1] WHO Technical Report Series, No. 193, 1960 (Report of a Joint WHO/UNESCO Expert Committee on Teacher Preparation for Health Education).

Planning environmental health instruction in a teacher training programme

Planning for environmental health instruction in teacher preparation has to be done at two levels - (1) that of basic preparation of teachers, and (2) that of in-service training of those already in employment. A variety of teacher preparation programmes may already have been developed, the details of which should be available.

Before detailed planning is undertaken, information on topics that would provide answers to the following questions should be gathered.

(1) To what extent does the environmental health part of the curriculum, if any, reflect the health needs and special problems and solutions appropriate to the country?

(2) To what extent do the sanitary conditions of the teacher training institutions satisfy the standards prescribed by the appropriate authority?

(3) Who teaches environmental health and what teaching methods are adopted?

(4) What constraints - political, administrative, or sociopsychological - are involved in the promotion of environmental health teaching in teacher training institutions?

In most parts of the world the existing curricula need strengthening or entirely new curricula need to be developed for environmental health instruction. Developed nations may find a need to add new contents on air and water pollution. An outline of the new curriculum, along with a statement of need for revision, must then be prepared in collaboration with those concerned with teaching.

The next stage is the creation of a proper climate for curriculum change. Attention will again be needed at three levels: top policy makers in the fields of environmental health, education, and administration; curriculum committees for teacher preparation; and teacher training institutions. The steps that would facilitate the process are given on page 44.

It is necessary for every teacher training institution to develop the capacity for teaching environmental health. An increasing number of larger teacher training institutions are placing the responsibility for coordinating and teaching health and health education in the hands of an instructor for the subject. Where this is not possible, an existing instructor with previous training and experience in a related field can be trained to assume responsibility.

Special attention should be paid to the sanitary conditions of school buildings. These buildings might be owned by the government, universities, or private bodies. While all may share the common problem of lack of amenities, the solutions will vary with respect to each. Environmental health planners must assume leadership for getting the necessary improvements carried out. This could be done by setting standards, providing technical consultation, supplying literature on the maintenance of school sanitary environments, promoting surveys, and even helping financially.

Provision for the sanitary supervision of teacher training institutions should be made. It is particularly important to supervise: food handling; the inspection of eating places; drinking-water fountains and other sources of drinking-water; the inspection of toilets; the instruction of food handlers; heating, lighting, and ventilation; refrigeration facilities; the sanitary quality of drinking-water; and the disposal of wastes. The instructor in health education, other teachers, and student teachers should be involved in inspection to ensure follow-up action.

Among many learning experiences, provision should be made for practice teaching in environmental health. It is commonly stated that improvements in educational methods are slow because "teachers teach as they were taught and not as they were taught to teach". Student teachers should be involved fully and should participate in the health services and education programme for the school.

In-service training should receive attention. There are many ways in which this could be done.

(1) Existing teacher training institutes could organize short seminars, workshops, summer institutes, etc. for teachers already in service.

(2) Some health education bureaux have a teacher training unit that undertakes the training of staff in training institutions on a priority basis. The activities of this unit could be extended to short orientation courses for those in service in the school system.

(3) A mobile team of trainers could conduct demonstration teaching classes in health in selected schools in their region.

(4) Wherever environmental sanitation projects are taken up, the staff of the project could (a) include teachers in the committee formed for health education; (b) utilize their services for community health education, and (c) arrange orientation training for teachers in the project area in environmental health.

SCHOOL, HOME, AND COMMUNITY RELATIONSHIPS

The need for mutual reinforcement of learning experiences between the school, the home, and the community makes it obligatory on the part of schoolteachers to take the initiative in building bridges between the three. Mention has been made before of activities through which cooperation and working relationships could be built. Environmental health personnel could promote these by facilitating the following activities.

(1) Formation of parent-teacher associations for every school. This would pave the way for a two-way communication. Parents will not only know what has been taught in schools, thus enriching their own knowledge, but have a role in determining what is taught. Such associations could jointly plan for school health improvement projects and mobilize resources from the community.

(2) Participation by teachers and students in community health projects. Teachers could serve as members of community health committees. Cooperative action by schools with health authorities opens the way for school participation in community health work directed by the health agency. There have been many examples of such useful cooperation. Teacher-student groups after initial orientation have taken responsibility for assisting health workers in family contact for education on latrine promotion, smallpox eradication, etc. In one case where a rumour was set afloat that skimmed milk powder was dangerous to health, students formed a dramatic group and enacted plays depicting the advantages of milk powder. Students have been utilized to make surveys of houses, to educate parents, to put up exhibitions for villages, and to carry out a number of other tasks. The inclusion of schools in community education has proved useful in both rural and urban localities. Recently a project was successfully tried in southern India to involve college students during their summer vacation in the organization of a mass immunization programme in a large town.

EVALUATION OF SCHOOL HEALTH EDUCATION

Periodic evaluation of environmental health instruction informs planners of the progress and results of activities. The major principles that apply to evaluation for environmental health, as given in the section starting on page 32, apply also to school health education. The primary objective of such evaluation should be to utilize the results for improving the programme. Evaluation of school education activities in environmental health could be carried out at the following three levels.

(1) Input

(a) Preparation of curriculum for environmental health instruction.

(b) Teacher preparation for environmental health instruction in schools.

(c) Teaching of environmental health in schools.

(d) Budget provision for environmental health instruction.

(e) Procurement and supply of instructional materials to schools and teacher training institutions.

(f) Establishing standards for sanitary conditions of schools and teacher training institutions.

(g) Provision of sanitary facilities in schools.

(2) Process

The measurement would be with respect to learning experiences provided for students under the heading described earlier (pages 57-58) - healthy school living; school health services; health instruction; and school, home, and community relationships.

(3) Output

Knowledge. School authorities have many ways of measuring the level of knowledge. The methods available include essay-type tests and objective tests. While essay-type tests are difficult for comparative evaluation, objective tests, including multiple-choice tests, matching type tests, and completion tests are easy to administer and facilitate the measurement of student progress.

Attitude. Attitudinal dimensions are the most difficult to measure. Some indications of attitude can be obtained from the reaction of pupils towards environmental health as a subject of instruction. One can also observe the attitudes of students towards health staff, towards the cleanliness and sanitation of school buildings, towards activities in the community, etc.

Health practices. Many methods could be used to measure changes in health practices - e.g., direct observation of students during lunch hours, recess periods, etc., a sanitary survey of the school environment, and health habit questionnaires.

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ANNEX 1. COMMON TERMS USED IN HEALTH AND HEALTH EDUCATION

Acceptance - Openness on the part of a person or group towards experience, objects, people or groups. Acceptance - rejection denotes a continuum.[1]

Activity - Performance of any work. Synonymous with work, effort, input, etc.

Adapt - Apply with modifications suitable to the condition so as to aid in achievement of objective.

Adoption - A decision to make full use of an idea as the best course of action available.[2]

Attitude - Socially formed orientation towards others and objects and reflecting a predisposition to an activity.

Baseline - The state of affairs existing before the implementation of a programme or a programme phase, which serves as a point from which subsequent changes can be measured.

Behaviour - Manner of acting or of conducting oneself. May be health habits, health practices, etc.

Change agent - Person or group influencing innovation-decision in a direction deemed desirable by the change agency.

Communication - Process by which senders and receivers of messages (stimuli) interact in a given social context. It includes all situations involving the sources of stimuli, the nature of stimuli transmitted, the method of transmission, the receiver of the stimuli, the responses evoked, or relationship among these factors.

Communication channel - Means by which the message gets from the source to the receiver.[2]

Community - A defined population (not necessarily at the municipal level) with a shared interest, need or condition, whether defined politically, geographically, culturally, by a problem or problem set, or by the provision of services.

Community health - A new science dealing with a new patient, a community; each community different and distinctive from every other community as each individual is different from his neighbor.

A science determining mass phenomena of community needs, felt and unfelt - group pathology.

A science of getting community understanding, involvement and participation in its health condition, programmes, and needed changes.

A science of prescribing for remedy, establishing community priority, coordinating with other agencies - joint planning for community health.

A science of administering, implementing, supervising, managing and evaluating community health programmes and projects.

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[1] Gould, J. & Kolb, W. L. ed. (1964) A dictionary of the social sciences, London, Tavistock.

[2] Rogers, E. M. & Shoemaker, F. F. (1971) Communication of innovations; a cross-cultural approach, 2nd ed. New York, Free Press.

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A science of creating an interdisciplinary team of professional equals, all primarily focused and concerned upon a new patient, the community.[1]

Criterion - A measurable component or test of a standard (q.v.) used to determine whether and to what extent the standard has been achieved.

Culture - Inherited artefacts, goods, technical processes, ideas, habits and values; the distinctive way of life of a group of people.

Cultural characteristics - Distinguishing qualities or traits in ways of feeling, thinking, believing and acting that are followed or practised by a group of people.

Education - A learning process or series of learning experiences through which an individual informs and orients himself and develops skilled or intelligent action or behaviour.

Environmental health - The term relates to the following:

(1) Water supplies with special reference to the provision of adequate quantitites of safe water that are readily accessible to the user.

(2) Waste-water treatment and water pollution control, including the collection, treatment, and disposal of domestic sewage and other water-borne wastes, and the control of the quality of surface water (including the sea) and ground water.

(3) Solid-waste management, including sanitary handling and disposal.

(4) Vector control, including the control of arthropods, molluscs, rodents, and other hosts of disease.

(5) Prevention or control of soil pollution by human excreta and by substances detrimental to human, animal, or plant life.

(6) Food hygiene, including milk hygiene.

(7) Control of air pollution.

(8) Radiation control.

(9) Occupational health, in particular the control of physical, chemical, and biological hazards.

(10) Noise control.

(11) Housing and its immediate environment, in particular the public health aspects of residential, public, and institutional buildings.

(12) Urban and regional planning.

(13) Environmental health aspects of air, sea, or land transport.

(14) Accident prevention.

(15) Public recreation and tourism, in particular the environmental health aspects of public beaches, swimming pools, camping sites, etc.

(16) Sanitation measures associated with epidemics, emergencies, disasters, and migrations of populations.

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[1] McGavran, E. G. (1970) Health educators at work, 21, 3-5.

(17) Preventive measures required to ensure that the general environment is free from risk to health.

Environmental sanitation - The control of all those factors in man's physical environment that exercise or may exercise a deleterious effect on his physical, mental, or social well-being.

Goals - Those ends towards which an individual's or an agency's motives are directed; the desired or expected outcomes.

Habit - A regularly repeated action on the part of an individual that is learned and that is observable to others.[1]

Health - State of complete physical, mental and social well-being, not merely the absence of disease or infirmity.

Health education component - That part of a health programme that is concerned with bringing about, through educational methods and means, the health behaviour that is required on the part of the people in order to achieve the programme goals.

Health problem - A statement of a situation or condition of people or their environment that has or has potentially an adverse effect on people's health or well-being.

Health programme - A plan of interrelated activities (or tasks or efforts) designed to achieve set health objectives.

Hygiene - The applied science of healthful living; it provides the basic scientific knowledge on which desirable health practices are founded.[2]

Implementation - The carrying out of a plan.

Leadership and leader - Leadership refers to activities of individuals whereby they guide people or their activities in organized effort. Those who carry out these activities are leaders.

Learning - A change due to experience in individuals' ways of thinking, feeling and acting.

Mass media channel - Those means of transmitting messages that involve a mass medium like radio, television, newspapers, films, etc., which enable the message to reach a large audience.

Medium - The means used in communicating information from one person to another, that is, the intervening substance through which impressions are conveyed. The materials used in an educational transaction are referred to as media.

Participation - The act of taking part in something.

Plan - A predetermined course of action to achieve a defined objective.

Planning - Process through which a decision is transformed into action.

Public health - The science and art of preventing disease, prolonging life and promoting health and efficiency through organized community effort.[2]

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[1] Gould, J. & Kolb, W. L. ed. (1964) A dictionary of the social sciences, London, Tavistock.

[2] Turner, C. E. (1964) Community health educator's compendium of knowledge. Geneva, International Journal of Health Education.

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Target group - A group or section of the population selected for special attention on the basis of having special characteristics.

Value - The outcome of human choices among competing human interests.[1]

ANNEX 2. TWENTY PRINCIPLES OF PLANNING HEALTH EDUCATION[1]

1. Planning for health education should be an integral part of all health planning.

2. Sound planning will be rooted in sound health facts and will apply these facts throughout the planning process.

3. Sound planning will incorporate sound principles and methods of education.

4. Health and education need to march together, neither encroaching on the other, but both providing mutually reinforcing services.

5. Full recognition needs to be given to the people among whom programmes are being developed - to their needs and interests and to the social, cultural and economic setting in which they live.

6. In developing programmes we must recognize the hierarchy of needs as we in public health work see them, and the hierarchy of needs as people see them, and then find ways of bringing these hierarchies together.

7. People for whom programmes are being planned should have a part in the planning, thus making the situation one in which there is planning with, not for, the people.

8. It is wise to start with simple things most likely of success and then move on to other things when success has been achieved.

9. It is wise to start with the things that the people themselves see as important and have come to recognise as their problems.

10. All resources should be utilized which will facilitate planning at different stages, as follows:

    (a) Defining problems and setting goals;

    (b) Collecting facts;

    (c) Interpreting facts and drawing conclusions;

    (d) Applying conclusions to the carrying out of a programme;

    (e) Evaluating results.

11. Planning should be only within the ability to execute.

12. There should be flexibility and continuity in planning.

13. Provision should be made for both short-term and long-term programmes.

14. In planning a long-term programme of education, ample time should be allowed.

15. In planning, there should be close cooperation between official and voluntary bodies.

16. The contributions of related disciplines should be utilized to the fullest.

17. All members of the health team should be brought into the planning.

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[1] By Professor Ruth E. Grout. From the report of the European Conference on Health Education of the Public, World Health Organization, Geneva.

18. Leadership is needed in the planning process.

19. In programme planning for health education, there is need for administrative understanding, support and active participation.

20. Assessment of results is essential if planning is to be sound.

By themselves these principles are meaningless; only if they result in action can they be of value.

ANNEX 3. IDENTIFICATION OF THE LEADERSHIP IN THE COMMUNITY[1]

The identification of leaders, formal and informal, is an important task. Two methods have been developed by the Gandhigram Institute for Rural Health and Family Planning; they are simple methods and may easily be adopted by a worker at the level of a health inspector, after training. The choice of method depends on the size of the community.

Method 1. Sociometric method

(1) Meet the formal leaders like panchayat president, village munsiff, village karnam, schoolteacher, and village-level worker.

(2) Introduce yourself and explain the purpose of the visit.

"We are from the Health Department. We are interested in working with you to find out the health problems in your village and in exploring how we can be of use to you. Our interest is the same as yours, namely, the improvement of the health and welfare of all the residents in the village. We know that they are interested in public welfare and they know their health problems better than we do. We shall therefore be grateful if you, as a leader, would be kind enough to give us the following information we require for the work."

(3) Collect information on:

(a) the number of households;

(b) the different caste groups in the village and the number of families in each caste or religious group;

(c) the existence of any factions in the village and the people who belong to them;

(d) the most influential group or community in the village;

(e) the names of the communities that can influence others;

(f) the names of leaders in each of the communities who, the interviewee considers, are influential and greatly interested in public work;

(g) the persons whom people generally approach whenever they have problems.

(4) Prepare a sociogram based on the information gathered from questions (a) to (e) above.

(5) Make a list of leaders.

(6) Meet each of them individually. Introduce yourself as a health worker who has come to work with the people in trying to solve health problems. Explain to them the purpose of working with leaders and the need for selection of leaders and formation of health committees. Then request them to list the names of leaders whom they consider influential and useful, enter their names in the forms supplied and obtain the information specified in the form for each one of the names suggested.

(7) Tabulate all the names gathered and find out the number of times each of them has been mentioned by the interviewees. Those mentioned most are the most influential leaders.

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[1] From: Pisharoti, K. A. et al. (1971) The Attoor experience: implication for a statewide family planning programme. Gandhigram (Tamil Nadu, India), Gandhigram Institute for Rural Health and Family Planning (Action Research Monograph No. 4).

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Method 2. Sampling method

This is a method in which the people of the community are asked to select the persons whom they consider leaders. A husband is interviewed from every tenth household of a village. A second random sample also of every tenth household is visited to interview the wives.

(1) Introduce yourself. "I am associated with the health and family planning programme working in this area. We have met the leaders in your village. All of us, particularly the leaders of the village, are concerned with protecting the health of mothers, improving life for people generally, and providing the best possible education, food, and care to children. For this purpose, we feel that people should have correct information on family planning."

(2) Introduce the programme. "We would like you to suggest a number of men and women in this village who could be given special knowledge about family planning and a supply of contraceptives, which they could pass on to you or to any others in the village who might want them."

(3) Discuss suitable persons. "You should select for such work persons:

(a) from whom you would like to get information and help regarding health problems and other matters;

(b) whom you respect and in whom you have confidence;

(c) who are interested in helping people;

(d) who would be available for spreading information and providing help in your own group.

With these points in mind, would you please give the names of individuals whom you think would be suited for this type of work as leaders in your community? Your views will be kept confidential."

The health inspector should interview the selected husbands, and the auxiliary nurse/midwife should interview the selected wives. Together they compile the list of suggested leaders into a panel of candidates. Each suggested leader is interviewed and advised of the household sampling that has yielded his name. If the list of candidates is short, all those who are willing to accept the responsibility for this work are accepted.

ANNEX 4. PLANNING AND CONDUCTING EFFECTIVE INDIVIDUAL AND FAMILY CONTACTS

Home visits and individual or family contacts require careful planning and implementation. Such visits could be for the collection of information about the village or the family, for providing information, motivation and education, for giving reassurance or psychological support, or for building up relationships. Whatever the purpose may be, attention to the following essential features will contribute to the effectiveness of the visits.

Planning for the visit

(1) Study the records of the household or consult with friends to learn as much as possible about the individual or family before the visit.

(2) Make notes or be prepared in advance on probable problems to be discussed during the visit.

(3) Know the community resources and facilities available so that referral, if needed, can be made to the proper agency on problems in which the family is interested.

(4) Check the scientific information necessary for the purpose of the visit.

(5) Fix the time and date of the interview with the respondents or at least give them advance notice so that they expect you.

Approach to the individual or family

(1) Introduce yourself and greet according to local custom.

(2) Try to establish rapport with the individual or family. Rapport-building is an essential first step in gaining your acceptance, especially when approaching persons whom you do not know. Such rapport-building will be facilitated by revealing your knowledge of the family, talking about things they are interested in, revealing a willingness to serve, praising the interviewee for his accomplishments, and participating in some common activity.

(3) Judge your length of stay by existing conditions. If the situation is convenient, avail yourself of it fully; if not, arrange a further visit.

During the interview

(1) Be conscious of the social and emotional forces at work within the interview situation and capitalize on them if they are in your favour.

(2) Lead people to do the talking and cultivate the ability to be a good listener.

(3) Accept that your role is not to make decisions for the sake of others. Try instead to create situations and opportunities by which the interviewee will be helped to arrive at decisions on his own.

(4) Be sure about the basic ego needs of the individual, the satisfaction of which could help you to lead him to discuss your ideas and come to the most appropriate decisions.

(5) Remember that communication takes place through nonverbal channels as well as through speech. One should be conscious of these other channels and adept in interpreting them with respect to the interview situation.

(6) Refrain from sermonizing, moralizing, or rendering judgements before the full facts of the situation are understood.

(7) Listen to the family's problems; gain confidence by showing a sincere interest in them and by helping to redress them to the maximum extent possible.

(8) Give commendations for carrying out suggested measures or for other good points of family and children.

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(9) Try not to make too many suggestions during one visit.

(10) Talk in simple language and give clear and correct information.

(11) Use terms people understand.

(12) Demonstrate whenever required.

(13) Explain any literature you may give to them.

(14) Avoid clashes or arguments during contact. There are many ways by which one can put across ideas opposite to those expressed by interviewees without offending their feelings.

(15) Have faith in people and their ability to solve many of their problems.

(16) Never make a promise that you know is not within your power to keep.

(17) Help the interviewee to feel at ease and ready to talk.

(18) Do not terminate the visit prematurely. Often, in public health problems, repeat visits are necessary. Make plans for the next visit before breaking off.

Follow-up

During the interview certain decisions might have been taken that require follow-up action on your part. Attention to these is essential before you approach the person for the next contact.

ANNEX 5. GUIDELINES TO MAKE THE SMALL-GROUP APPROACH HIGHLY PRODUCTIVE

(1) Contact should be made with as many members of the group as possible, individually and prior to the meeting, to interest them in the problem proposed for discussion.

(2) It is preferable to limit the membership to about 15-20 for group thinking. Care should be taken to include some leaders, innovators, and satisfied adopters in the group.

(3) The date, time, and place of meeting should be so fixed as to make it convenient for most members to attend.

(4) Before the meeting starts, an effort should be made to ensure that everyone is comfortable so that the group will be relaxed and able to direct its thoughts to the topic being discussed. An introduction of members to each other is essential.

(5) The best discussions will be had when the people are seated in a circle so that everyone can see the faces and expressions of every other person in the meeting.

(6) At the outset of the meeting the group should decide about the leader, recorder, time schedules, and procedure.

(7) The meeting may start by the group leader explaining the problem for discussion.

(8) Every member should be encouraged to greater activity by giving him approval and recognition for the part he plays.

(9) Speeches should be discouraged. The objective should be to secure expression of the views of as many individuals as possible.

(10) The group may need pertinent information on the problem it is trying to solve. The educator should find out whether the required resources are available in the group; if they are not he may bring in resource persons from outside. The resource person should not make a speech but should simply impart the information that the group wants for its decision making.

(11) The discussions should be kept focused on the problem. There is bound to be a certain amount of digression occasionally, and a good leader will permit this, though not to the extent that it displaces the original goal.

(12) There is a need to summarize the discussions occasionally so as to enable the group to focus on the subject and develop it further.

(13) The leader should listen well and patiently and be careful not to impose a decision on the group. He should often make his contribution in the form of questions.

(14) Members of the group are likely to express divergent opinions. But these should be integrated and conflicts resolved by pointed and humorous attitudes.

(15) Compromise on the part of members, the admission of errors, and the occasional yielding of ground will help the group to proceed.

(16) A group needs a recorder to produce summaries of the discussion and decisions. These summaries enable the group to see what it has accomplished from time to time.

(17) Leadership functions in the group need not always be performed by one person. Making others take the leadership will enhance their status.

(18) Occasional evaluation by the group of its own progress towards the achievement of goals enables it to identify any deficiencies, to remedy them, and to make better progress. The presence of an objective observer who can report back to the group has been found useful. The observer is concerned with such problems as:

(a) Are the objectives of the group clear and well laid out?
(b) What is the motivation of the group?
(c) Is the group too leader-centred?

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(d) Are the leadership functions properly discharged?
(e) How hard is the group trying?
(f) Are the interests of members sustained?
(g) Is the group cohesive?
(h) Is communication open within the group?
(i) Does the group have the information it needs to solve problems?
(j) What progress is being made in solving the problem undertaken?

ANNEX 6. COMMUNICATIONS MEDIA

A variety of communications media are available for health education work. Radio, television, films, filmstrips, newspapers, magazines, posters, exhibitions, mailing, and flannelgraphs are among those commonly used. While some are used mainly as mass information channels, many could be used in group situations, training, and school health education activities.

Many factors govern the choice of communications media suitable for specific health problems and target audience. Apart from consideration of factors like availability, expected coverage, cost, effectiveness, and administrative feasibility, there are certain principles one should observe in their selection and use.

(1) They should be considered educational tools only. The end product is not the result of tools alone but depends on the teacher, his technical skill, and the elements of the learning process.

(2) They should be selected with due regard to the programme objectives, particularly where audiovisual materials and methods are concerned.

(3) They should be suitable for the groups who will use them.

(4) They should be scientifically accurate in their content.

(5) They should have a good eye and ear appeal.[1]

Radio

Radio is one of the most widely used mass information channels. Community sets are generally provided in rural areas, as most individuals cannot possess separate sets. It is relatively inexpensive and endows credibility and respectability to the messages transmitted. Extension agencies promote the formation of rural radio forums under which listening is supplemented by group discussions. Such planned programmes to stimulate discussion among people obviates the criticism that radio programmes tend to be impersonal. Messages broadcast could be tailored to meet the needs of people at various stages of adoption. A variety of programmes like information talks, interviews with beneficiaries, interesting playlets and round-table discussions, could be arranged through this system. An initial survey to gather data on listeners, listeners' habits, most favoured programmes, etc., would help the design of programmes to achieve maximum results. Special programmes could be designed to meet the needs of schoolchildren, and broadcasts could be supplemented by formal classroom discussion. Scripts and releases for radio programmes must be prepared by the environmental health agency and made available to radio stations.

Television

This is a comparatively new medium. The effectiveness of closed-circuit television in teaching in universities and schools has been tested in the USA. The Ford Foundation reported that, like textbooks, television is only a tool, which can be misused or badly used. However, when wisely and imaginatively used, it can play a major role in enriching education. Studies on the use of television by health departments in Canada and Saudi Arabia have been reported. The Republic of Korea is using it for a family planning programme, and the USA has some experimental projects in the same subject. There is every possibility of using this medium in developed countries for education on the prevention of air and water pollution. It is an effective tool in school health education programmes.

Films

The film is one of the persuasive media, but it is expensive. It can be used to provide entertainment, give information, influence attitudes, and train personnel. It can be directed at the general public, national leaders, professional groups, or workers in the field. "Common denominator" films, which go beyond linguistic and cultural barriers, are particularly useful in training situations. The environmental health field offers wide scope for producing films on a variety of subjects, and, in addition, there are possibilities of integrating environmental health practices in films on subjects such as nutrition, family planning, education, and agriculture.

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[1] These principles are from: Society of Public Health Educators, Research Committee (1963) Review of research related to health education practice. Health education monographs, Supplement No. 1, New York, Society of Public Health Educators.

Films to suit different target audiences should be carefully selected and previewed before being shown. It is useful to introduce the film before screening so as to arouse the expectations of the audience. Similarly the film show may be followed by a discussion to reinforce learning. A second showing is sometimes necessary.

Films that lecture to the audience may not produce much effect. It is preferable to build the theme around a story. Films meant for the community should stress the positive advantages of following environmental health practices rather than the negative aspects. Since both the production and the screening of films are costly, considerable research is needed to develop attractive themes, to determine the most suitable times to show films, to determine the usefulness of mobile units, and to investigate other related factors. The production of films on a variety of environmental health subjects suited for the training of village-level personnel will be of value.

Filmstrips and slides

Filmstrips are series of still pictures on a continuous strip of 35 mm film. They are shown through a special projector, often with remote control so that the pictures may be viewed at any desired speed. They may or may not be used with sound. When coordinated with sound, records or tapes are used. The items in a filmstrip are arranged serially and in some order depicting a story or process. The advantage of filmstrips is that the educator controls the tempo of projection and is able to give effective commentary. They can be stopped at any stage to generate a discussion and then continued. Summary strips shown at the end of the exposition help to reinforce the ideas covered. Filmstrips have been found to be extremely useful for small groups and in training.

The procedure for the use of filmstrips is the same as that for a film. Care should be taken in choosing subject-matter suitable for the audience and the learning objective.

Slides are individual still pictures. They are highly flexible in their use and make an excellent supplement to teaching. An effective way of using slides is to have the pupils prepare their own in connexion with a specific health subject.

Newspapers, magazines, and printed materials

The use of newspapers and magazines in an educational programme is necessary, otherwise they could play an adverse role by giving publicity to views opposing the programme. If water supply and sewerage works are to be treated as public utilities and financed by the people, people should be prepared to subscribe to this concept and newspapers and magazines can play an effective role in preparing people to accept the concept. The target group for both newspapers and magazines are the literate section of the community. Technical articles, success stories of how communities have solved their environmental health problems, speeches of important personalities, factual information, etc., can find outlet through newspapers. The information could reach beyond the literate, through the two-step flow of communication as observed by Katz. In using this medium, it is most important to get the publishers interested in the programme. Organizing special seminars for newspaper editors, co-opting them as members of mass media committees, and buying space for advertisements, are useful methods of involving them. Before preparing scripts for newspapers and magazines, the nature of the target audience should be considered.

Printed materials such as pamphlets, folders, leaflets, brochures, are also useful. They should be prepared for specific groups and used selectively - e.g., by handing them out after a talk or a group discussion in order to recall the main points. Indiscriminate distribution is of little value.

Exhibitions

Exhibitions prepared with care and foresight can be of value as a communication medium. Display materials should be attractive and durable. Exhibitions can be mounted in which environmental health is combined with other health or development subjects. Well trained personnel should be available to explain the exhibits. The participation of the community, through its volunteers, should be sought both in arranging the exhibition and explaining the exhibits. In most cultures, real-life photographs have been found to be better understood than cartoon pictures. The themes and exhibits should be based on the educational level of the community and on local culture. The presentation of few ideas, the reinforcement of ideas through a summary panel at the end, and the provision of life-size models add to the teaching potential. Information on the availability of services should be made known to those who show interest. During an exhibition on sanitation, those who exhibited interest in putting up latrines were asked to sign request forms and the sanitarians followed these up with home visits and provision of services.

An exhibition requires careful planning with respect to the objectives to be attained, the preparation of exhibits, the place, the timing, etc. It has been found that among common exhibits live models, models, and visualization rank in order of decreasing interest. Exhibitions should be evaluated whenever possible and the results fed back to the planners, who can take them into account in arranging future exhibitions.

Posters

The purpose of a poster is to convey an idea through a pictorial design which may be a sketch, a painting, or a photograph. The complexity of illustration has been found to be inversely proportional to the effectiveness of posters in communication. Words used in posters should be minimal and familiar to readers. The presentation of visual concepts should fit with the background and experience of intended viewers. The 10 big elements in poster design commonly listed are: (1) attention-arresting value, (2) good layout, (3) Balance, (4) movement, (5) emphasis, (6) unity, (7) white space, (8) simplicity, (9) colour, and (10) contrast.[1]

Studies on posters have emphasized the need to display them in places where people can see them and also in a number of different places in a community. Posters should not remain in one place for too long. Messages and design must be specific to the situation. A poster study done in relation to an environmental sanitation project in rural India showed it to be a "young male medium" because of the high rates of seeing and understanding of posters among that group. The need to pretest a poster before use needs no emphasis.

Flash cards

These are a set of small compact cards presented one by one in a sequence before an audience for teaching purposes. The story is told as each card is held before the group. The story should be simple and focus on one subject at a time - say vector control or dishwashing. Simple line drawings, photographs or cartoons adapted to local culture and conditions could be used. The size of each card should be at least 55 x 70 cm so that everyone can see the picture. The method is useful for small groups of people. In planning to use flash cards, the teacher must prepare the talk and select the main ideas he wants to get across to the audience. The pictures are so prepared that each idea is reinforced by a visual impact. In many instances community leaders were trained to use flash cards during their contacts with people for educational purposes. The number of cards in each set is usually limited to 10-20. Flash cards serve the same purpose as flip charts, but they are of larger size so that they can be used for a larger group.

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[1] Turner, C. E. (1964) Community health educators compendium of knowledge. Geneva, International Journal of Health Education.

Annex 6

Flannelgraphs

A flannelgraph is a visual teaching aid. It consists of a board of any size (but preferably about 60 x 75 cm) made of plywood, cardboard, or wood with its surface covered by rough flannel. The pictures used for illustration should also have a piece of flannel, felt, or sandpaper attached to their backs so that they will stick on to the board. Flannelgraphs are useful for constructing and developing an idea, step by step. The idea can be presented in story form, the illustrations being simple, big, and bold. The flannelgraph does not have to be pretty, but it must be capable of being seen and understood from a distance. Drawings, photographs, pictures, or any illustrations can be used to depict the idea. After using the flannelgraph, audience learning can be tested by asking volunteers from the group to select pictures from an assortment laid on the table and post them on the board in sequence, while telling the story. Flannelgraphs are a dynamic teaching aid. The capacity for building up the story and holding the audience in suspense is the great advantage of this medium.

Mailing

The mailing of literature as an educational channel has been widely practised in relation to family planning in some countries. In the USA an experiment is being tried where all newly married couples receive a packet of literature on contraception. Mailing can be used in environmental sanitation programmes, especially with regard to air and water pollution and the promotion of basic sanitary services. The conditions for its success are the isolation of target groups, a high level of literacy, an efficient postal system, and the existence of follow-up services.

Graphic aids

Graphic aids help in the pictorial presentation of ideas and facts. Line graphs, bar charts, pie charts, map diagrams, pin maps, and spot maps are all familiar to environmental health personnel, who use them continuously in their reports. They could be used for community education also.

Pretesting of educational materials

Pretesting is a method of applying objective measures during the development of a programme in order to identify barriers at a time when changes can be made easily and at minimum cost. This should apply to educational materials. Pretesting should, however, be differentiated from programme evaluation. Pretests are done before the programme is launched. The pretesting of materials for identification of barriers to communication is best carried out among individuals or groups similar to those for whom the material is planned. For example, a filmstrip meant for training sanitarians should be pretested with that group, while one meant for general public should be pretested among that group. Usually it is not necessary to have a big sample for pretesting. The major purpose of pretesting a communication medium is not to test its effectiveness in bringing about a change but to test whether the information intended to be conveyed through the medium is understood by the audience to whom it is addressed.

ANNEX 7. SUGGESTIONS FOR PLANNING OR CHECKING THE EFFECTIVENESS OF COMMITTEE, STAFF, AND BOARD MEETINGS[1]

(1) If important decisions are to be made, discuss the matter with committee members in advance. You can help an individual form an opinion in private conversation. Once he has expressed an opinion before the group, it is more difficult for him to reverse himself. Sometimes a meeting fails because the people have not been sensitized to the need for change. A meeting called too soon or at the wrong time may crystallize resentment or antagonism.

(2) See that accurate minutes of pertinent previous meetings are in the hands of the group sufficiently far in advance of the meeting to receive adequate attention. The sooner they are sent after a meeting, the better.

(3) Prepare an agenda so that committee members can see what questions are coming up. Make it impersonal and unbiased. You may wish to make it available to them in advance.

(4) Make the meeting pleasant, comfortable, friendly and attractive. Meet around a table when possible. "A committee is too big if it can't get its feet under the same table." Avoid having the committee sit in the front seats of an auditorium.

(5) Do not overlook the possibilities of adding to the pleasure of the meeting through serving food, providing flowers, or making sure that the room is attractive and the seating comfortable.

(6) Draw up too few chairs instead of too many, when you are not sure how many persons are coming. Bringing up additional chairs suggests that more people came than were expected. Empty chairs have the depressing suggestion that some expected people did not come.

(7) Review the minutes of the previous meeting where continuity of thinking is needed.

(8) Have at hand or readily available all of the visual and reference material to which the committee may wish to refer.

(9) If you have a fixed time for beginning or ending the meeting, try to stick to it.

(10) Discuss first those items on which it is easy to get agreement. Then the group can tackle more effectively those things upon which there will be disagreement.

(11) If you want the meeting to be sure to take some action, arrange in advance for an appropriate person to propose it. Meetings are often ready to take constructive action but fail to do so because no one present makes the motion.

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[1] These suggestions are from: Turner, C. E. (1964) Community health educators' compendium of knowledge. Geneva, International Journal of Health Education, pp. 75-77.

ANNEX 8. FIELD TRAINING: A SPECIAL NEED OF PROGRAMME-RELATED TRAINING[1]

Because programme-related training is performance-oriented rather than subject-oriented, it is essential that the learner be given opportunities to practise the performance objectives under conditions as similar as possible to the job situation. One way of providing such opportunities is to develop a field practice demonstration area.

While the main objective of a field practice demonstration area is to provide field experience - both observation and practice - to the trainees, it serves a variety of other useful functions. Certain assumptions underlying family planning programmes may need confirmation or modification. The educational approach may also need to be modified as the programme develops. A field practice demonstration area helps the training centre faculty to generate new information on programme development and to redefine job functions on the basis of this new knowledge. In addition, it serves as a social laboratory in which the instructors can acquire new skills and further their own professional development.

A field practice demonstration area enables students to relate conceptual knowledge to real and practical problems; to develop work skills in an environment similar to their own work setting; and to test their own competence and gain self-confidence. The area enables instructors to enrich their teaching through close contact with an operating programme, to develop and test new methods and materials, and to apply knowledge from their own disciplines to problems of health and family planning programme development. It also offers advantages to programme administrators, for it can serve as a pilot area in which to test health and family planning delivery systems and other operational procedures.

Of critical importance is the selection of the site for the field practice demonstration area. The following guidelines have been found useful:

(1) The area should be as close to the training institution as possible.

(2) Communication facilities should be available so that, as far as possible, all units of the area are accessible throughout the year.

(3) There should be a full complement of staff, vehicles, and services as in the prevailing pattern of delivery of health and family planning services.

(4) A psychological climate conducive to productive action should be developed and maintained.

(5) The area should not serve as the field demonstration area for any other institute or programme.

After the site has been selected, one of the first issues to be resolved by teachers and administrators is the administrative relationship between the training institution and the area selected. One view is that the training centre director should have administrative control over the field practice demonstration area staff so as to ensure effective functioning. While this approach has the advantage that the training faculty is free to develop programmes and utilize them for training, it has its limitations. The family planning programme is only one aspect of the total activity of the health centre. Since administrative control must of course apply to the entire health programme in the field practice demonstration area and not only to the family planning programmes, this broad responsibility places a heavy burden on the training faculty and may divert their attention from their major function of training. It also necessitates expanding the training faculty so as to take care of the additional work involved. As an alternative to administrative control, technical control over the staff of the demonstration area may be vested in the training director. Within this framework, the director would be free to rearrange working patterns in family planning within the field practice demonstration area, and to develop a model programme in consultation with those concerned. He should also be able to arrange for training in the field practice demonstration area as necessary.

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[1] WHO Technical Report Series, No. 508, 1972 (Education and training for family planning in health services: report of a WHO study group), pp. 19-22.

A model programme can only emerge if the activities of the training institution are coordinated with those of both the field practice demonstration area staff and other local institutions. In developing nations, experience has shown that departments such as agriculture, education, and community development have a role to play. The representatives of the people for whom the services are being created must also be involved in the planning and implementation of the programme. To facilitate coordination among the agencies a planning and implementation committee should be formed, consisting of: (1) the director of the training institutions, (2) the officers in charge of health and family planning in the district where the field practice demonstration area is located, (3) the medical officers of the primary health centres, (4) representatives of welfare departments, (5) representatives of the general public, and (6) representatives of local bodies. The director of the training institutions may function as the convener of his committee, calling meetings as needed to facilitate programme development.

Questions are often raised about the extent to which the central training faculty should take on responsibility for developing programmes in the field practice demonstration area in addition to their training load. In a field practice demonstration area with the normal primary health centre staff, the development of a model programme will have to be the shared responsibility of the training faculty and the service staff. The health centre staff will be concerned with day-to-day activities, while the multidisciplinary training faculty should take responsibility for guiding and helping them to develop programmes. Such responsibility may be supportive and consists of assistance in planning, implementing, and evaluating the programmes at various levels. A helpful relationship can be developed if the members of the training faculty agree to perform functions that parallel those of their counterparts on the health centre staff. For example, the physician lecturer might become the counterpart of the medical officer of the health centre, and the health education instructor could parallel the community educator. In this way the training faculty will remain fully familiar with the programmes being carried out in the field practice demonstration area and be in a better position to help their counterparts improve their programme implementation and problem-solving. Another advantage of such a procedure is that it provides a useful channel of feedback concerning job functions and working methods to those responsible for programme administration and programme development studies.

An early step in the development of the field practice demonstration area is the identification of the training needs of the regular health staff working in the area and the meeting of these needs. Such training many consist of initial orientation, job-oriented training, continuing training on the job, or refresher courses whenever deemed necessary. The initial orientation should include a discussion of the purpose and scope of the field practice demonstration area, the roles and responsibilities of the training centre faculty and demonstration area staff, and coordination measures.

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